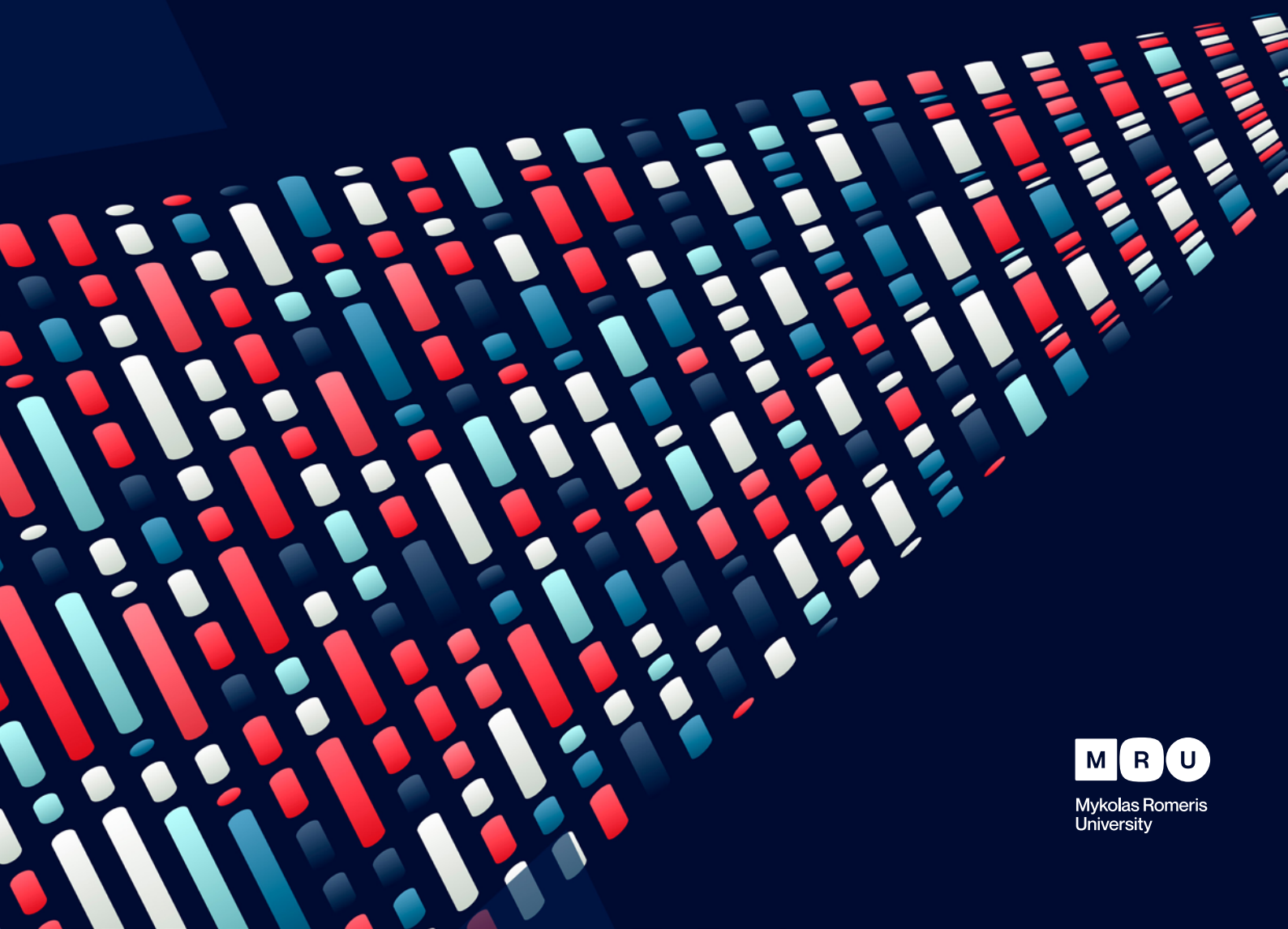
Mechanisms of Resilience in Uncertain Times:

Crisis Management, Social Entrepreneurship, and Human Capital Development



Mykolas Romeris University

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Mechanisms of Resilience in Uncertain Times:

Crisis Management, Social Entrepreneurship, and Human Capital Development

Collective monograph

Vilnius, 2026

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Approved for publication by the Council of the Public Security Academy of Mykolas Romeris University, at the sitting on 10 December 2025.
Resolution No. 10-541 (1.15 E-20601).

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ISBN 978-609-488-139-8 (El. - PDF)
DOI 10.13165/9786094881398
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INTRODUCTION

The contemporary era is marked by high levels of uncertainty, volatility, and complexity — factors that collectively constitute what is commonly referred to as the VUCA environment (volatility, uncertainty, complexity, ambiguity). Within such a context, social systems, national economies, entrepreneurial structures, and institutions are confronted with multiple and overlapping crises, ranging from global pandemics and armed conflicts to climate disasters, technological disruptions, and financial instability. These challenges demand from systems not only the ability to endure, but also the capacity to adapt, recover, and transform.

In modern scholarly discourse, resilience is no longer perceived as a static attribute, but rather as a dynamic capability of a system to adjust, maintain integrity, and evolve under stress. This concept encompasses institutional, behavioural, organizational, and cognitive components that collectively determine the effectiveness of responses to uncertain external conditions.

According to Tomlinson, Sinkovics, and colleagues (2025), the resilience of entrepreneurial structures is often formed well before a crisis unfolds and is deeply influenced by the value orientations of leadership. Entrepreneurs whose pre-crisis strategies were guided by principles of sustainability, social inclusion, and environmental responsibility tend to perceive crises not as threats but as opportunities for transformation and business reinforcement. Similarly, Alshebami (2025), examining small and micro-enterprises in developing countries, demonstrates that adaptive capacity — shaped by crisis preparedness, client orientation, and the ability to reorganize business processes swiftly — is a critical mediator between crisis exposure and the capacity to recover.

The findings of Plaček et al. (2025), who studied social enterprises in the Czech Republic and Slovakia during the COVID-19 pandemic and the Ukrainian refugee crisis, are of particular interest. Their research shows that the high resilience of these entities can be attributed to their mission-driven nature, flexibility in decision-making, and deep integration within local communities. This suggests that resilience is not solely a function of financial access, but also a product of sound institutional design and strong social ties.

At the community level, Liu and Mostafavi (2025) emphasize the significance of social networks and cooperation. Their research demonstrates that the density and configuration of interpersonal and institutional relationships within a community play a vital role in the speed of resource mobilization and the overall effectiveness of crisis recovery.

Another crucial dimension is human capital. As highlighted by Shatila et al. (2025), a high level of digital literacy, access to technology, and a well-developed educational infrastructure directly enhance entrepreneurial resilience. This underscores the need for systematic investment in competence development, particularly in the context of technological transformation and economic digitalization.

Therefore, the study of resilience mechanisms in conditions of uncertainty takes on interdisciplinary relevance. It enables scholars and practitioners to (1) identify factors shaping adaptability, (2) develop strategies oriented toward risk prevention, (3) construct practical models for crisis response and recovery, and (4) support sustainable and inclusive development grounded in social and institutional resources. This line of inquiry is particularly critical for high-risk environments — such as Ukraine — where resilience becomes not merely a strategy for survival, but a platform for future reconstruction and economic integration.

Conceptualizing resilience as a systemic characteristic necessitates analyzing not only external risk factors but also internal mechanisms through which society, business, and government can effectively adapt to change. In times of uncertainty, the key components of such adaptation include crisis management, social entrepreneurship, and human capital development. These elements are not only interrelated — they constitute an integrated architecture of resilience that supports both immediate responses to threats and long-term systemic transformation.

First and foremost, crisis management serves as the foundation of operational resilience. Effective crisis management strategies enable organizations to identify threats, develop response scenarios, mobilize resources, and minimize adverse outcomes. As demonstrated by Michalkova (2025), enterprises that adopt advanced bankruptcy prediction models and tools for financial diagnostics show significantly greater resilience during economic crises. These analytical instruments enable the timely identification of vulnerabilities and support proactive restructuring measures. Complementarily, Li, Cheng, and Lu (2024) highlight that organizational resilience is substantially enhanced when digital infrastructure is combined with high levels of social capital, allowing firms to respond swiftly and cohesively to external disruptions. These findings confirm that crisis management is not merely a technical or administrative function, but a core element of systemic resilience — requiring integrated leadership, data-driven decision-making, and cross-sectoral collaboration.

Second, social entrepreneurship acts as a form of social innovation and a driver of local resilience. It facilitates the integration of market mechanisms with the resolution of socially significant challenges, particularly in vulnerable regions. Plaček et al. (2025), in their study of social enterprises in Central Europe, show that these entities not only mitigate the consequences of crises but also fill institutional voids where traditional governance mechanisms are either ineffective or

overwhelmed. Social entrepreneurship exhibits a high degree of flexibility, innovation, and mission orientation, which enables it to adapt to emerging challenges more rapidly than large businesses or state institutions. It helps reduce social tensions, engages marginalized groups in economic activities, and promotes social integration — all of which are essential to resilience at the community level.

Third, human capital is not merely a resource but a prerequisite for resilience. Its development — in the form of educational attainment, digital literacy, entrepreneurial skills, and adaptability — has a profound impact on a society's capacity to navigate crises. As evidenced by the research of Shatila et al. (2025), a high level of human capital enhances entrepreneurial resilience and facilitates the more effective adoption of digital technologies, especially in smaller economies. However, resilience cannot be achieved solely through institutional reforms; it requires cultural and behavioural transformation as well. In this regard, elements such as trust, willingness to learn, psychological resilience, and collective action capacity become particularly relevant. Liu and Mostafavi (2025) stress that dense horizontal networks and strong social capital substantially accelerate post-crisis recovery by enabling resource mobilization at the local level.

The integration of these three components allows for a transition from fragmented approaches to resilience to the development of comprehensive adaptive systems. Crisis management ensures an effective response; social entrepreneurship contributes to inclusion and innovation; and human capital guarantees long-term sustainability and growth. Studying them in conjunction offers an opportunity to design not only strategies for crisis mitigation but also models for sustainable and socially-oriented development.

Based on the conceptual foundations and current empirical research presented above, it becomes clear that resilience in conditions of uncertainty requires more than theoretical conceptualization; it demands a practical understanding of the tools and mechanisms through which it can be achieved. Resilience should not be treated as an abstract category, but as a set of managerial, entrepreneurial, and educational decisions implemented within real socio-economic and institutional contexts. Of particular importance is the analysis of resilience through the lens of its interrelated components — crisis management, social entrepreneurship, and human capital. The interplay of these components reveals the adaptive capacity of economic actors, the potential for social rebalancing, and pathways for strategic transformation.

In this context, the aim of the present monograph and its associated research objectives are articulated with a focus on identifying specific resilience mechanisms and developing targeted strategies for their implementation under conditions of escalating uncertainty.

The aim of this monograph is to identify and systematically substantiate mechanisms of resilience under uncertainty through a comprehensive analysis of crisis management, social entrepreneurship practices, and strategies for human capital development. The research seeks to provide both theoretical and empirical insights into how the interaction of these three components shapes the adaptive capacities of socio-economic systems, enabling their stability, recovery, and advancement during periods of crisis and transformation. Given the current global challenges — including armed conflicts, pandemics, demographic shifts, transformations in labour markets, and the erosion of traditional institutions — the shift from reactive crisis response models toward value-driven and institutionally embedded forms of governance has become particularly urgent. Therefore, the monograph emphasizes not the isolated analysis of each component, but their mutual interdependence and functional integration.

Research Objectives

To identify how the mechanism of resilience operates under conditions of uncertainty, based on an analysis of how crisis management tools are applied in the field of social entrepreneurship.

Drawing on the studies presented in Part One of the monograph (specifically the works of Mischenko, Kapranova, and Sharanov), this objective aims to demonstrate that the resilience of small and medium-sized enterprises in times of crisis is achieved through a combination of crisis diagnostics, flexible restructuring, digital transformation of business models, and localized decision-making. Special emphasis is placed on social enterprises, which exhibit strong institutional and organizational adaptability in the face of demographic and labour shocks caused by both internal transformations and external threats (e.g., the armed conflict in Ukraine). The analysis emphasizes that resilience in this context is not merely the result of external support but stems from a set of internal mechanisms such as mission-driven business orientation, the economic inclusion of vulnerable groups, and the ability to rapidly adjust managerial decisions in response to evolving conditions.

To develop strategies for human capital development and communication approaches in the context of economic security.

Based on the research presented in Part Two of the monograph (including studies by Milašiūnaitė, Adamonienė, Amelnytska, and others), this objective focuses on analyzing how investment in human capital contributes to building a resilient economy. Special attention is given to digital competencies, adaptive skills, entrepreneurial aspirations among youth, and the capacity to perceive and interpret economic risks.

Communication strategies are addressed as critical components for building trust, ensuring institutional legitimacy, and preventing social instability. In an environment where the media amplifies anxiety and perceptions of uncertainty, it is essential to develop narratives that promote agency, rational economic behaviour, and a capacity for meaningful responses to emerging threats. These strategies are conceptualized not as mere public relations instruments, but as fundamental elements of resilience that mediate interactions among the state, business, and society.

Research Methods

The methodological framework of this monograph is based on an interdisciplinary approach that integrates both qualitative and quantitative techniques, along with elements of comparative, systemic, and structural-functional analysis. The choice of methods is directly informed by the overarching aim of the study — uncovering mechanisms of resilience under uncertainty — and the necessity to align theoretical inquiry with practical case studies, as presented across both parts of the monograph.

Systemic Analysis

Used to examine resilience as a multifaceted phenomenon encompassing institutional, organizational, behavioural, and technological dimensions. This method enables identification of the interconnections among crisis management, social entrepreneurship, and human capital, and supports the evaluation of their combined impact on the adaptive capacities of socio-economic systems.

Content and Discourse Analysis

Employed to interpret informational, media, and politico-economic narratives concerning economic uncertainty, social resilience, and communicative security. These methods are especially prominent in Part Two of the monograph (e.g., the studies by Milašiūnaitė and Paurienė), which examine the structures of economic communication and risk perception.

Case Study

Applied to analyse specific examples of social entrepreneurship and crisis response strategies in countries such as Ukraine, Lithuania, and other EU member states. This method supports the identification of empirical manifestations of resilience mechanisms and allows for the comparison of successful practices in terms of scalability and replicability across diverse contexts.

Comparative Analysis

Facilitates the evaluation of differences and similarities in institutional approaches to resilience across countries and sectors. Comparisons encompass models of social entrepreneurship (e.g., in Ukraine and Lithuania), as well as strategies for managing human capital and crisis response.

Expert Analysis and Secondary Data Processing

Based on datasets from international organizations (OECD, ILO, Eurostat), scientific publications, and policy reports, this method ensures the empirical robustness of conclusions and allows for alignment with global research trends.

Elements of Econometric Modelling and Statistical Analysis

Utilized in selected studies featured in the monograph (e.g., the works by Amelnytska and Malich), particularly for assessing enterprise resilience, digital transformation, and business process restructuring. Applied tools include bankruptcy prediction models, adaptability indicators, and logistic regression models.

The monograph consists of two parts:

Part 1. Mechanism for Ensuring Resilience in Conditions of Uncertainty: Applying Crisis Management Tools in Social Entrepreneurship

Part 2. Communication Strategies and Human Capital Development in the Context of Economic Security

Researchers from multiple countries participated in this collective monograph, including scholars from Germany, Ukraine, Latvia and Lithuania.

Authors of the collective monograph:

Introduction – Žaneta Simanavičienė

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Editor-in-Chief: Žaneta Simanavičienė and Tetiana Gorokhova

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PART 1

MECHANISM FOR ENSURING RESILIENCE IN CONDITIONS OF UNCERTAINTY: APPLYING CRISIS MANAGEMENT TOOLS IN SOCIAL ENTREPRENEURSHIP

1.1. RESTORING THE ECONOMIC POTENTIAL OF UKRAINE: SOCIAL ENTREPRENEURSHIP AS A TOOL TO MINIMISE LABOUR RISKS

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Abstract *The purpose of the present article is to investigate the features of the functioning of Ukraine's labour market amid the demographic crisis, full-scale war, and profound socio-economic transformations that have caused increased labour resource volatility. The primary objective of the present analysis is to examine the dynamics of Ukraine's population size during the period 1990–2022. This analysis will provide a foundation for substantiating the feasibility of implementing a scenario-based approach to restoring the country's economic potential. The methodological basis of the study incorporates systemic analysis, spatial-structural modelling, and classification. The article proposes a spatial-territorial hierarchical model of labour market regulation, covering macro-, meso-, micro-, and nano-levels of management, which serves as a conceptual foundation for forming an integrated state employment policy. A classification of regional labour markets according to their stability level has been developed, thus enabling the adaptation of state support tools to the specifics of different territories. It is imperative to acknowledge the significance of aligning the interests of pivotal labour market constituents — namely, the state, business, and civil society — within the paradigm of cultivating an inclusive, adaptable, and robust labour market. The role of social entrepreneurship is substantiated as an instrument to mitigate labour risks, stimulate employment, and socially integrate vulnerable population groups. The State Employment Service of Ukraine is regarded as a prospective provider of institutional support for social business. The integration of the proposed models and approaches into state policy is likely to contribute to spatially balanced development, improvement of employment levels, and strengthening of national human capital in the post-war period.*

Keywords: *labour market, labour resource volatility, demographic situation, employment, social entrepreneurship, regional policy*

Introduction

The purpose of this article is to conduct a comprehensive analysis of the labour resource situation in Ukraine in the context of long-term demographic challenges and the ongoing full-scale military conflict. These have led to significant changes in population structure and the socio-economic environment. The primary research objective is to examine how population dynamics from 1990 to 2022 have contributed to a gradual decline in the country's labour potential, as well as to identify directions for improving employment policy in the context of post-crisis recovery.

In order to achieve this objective, the study employs systemic analysis, spatial-structural modelling, and typological classification methods. The proposal sets out a spatial-territorial hierarchical model of labour market regulation. This model encompasses macro-, meso-, micro-, and nano-levels of governance. This approach is intended to ensure integrated and coordinated employment policy-making that takes into account the geographic, economic, and social characteristics of Ukraine's various regions.

In the context of enhancing labour market adaptability, particular attention is paid to social entrepreneurship as a mechanism for mitigating labour risks, generating employment, and fostering the social integration of vulnerable population groups. The State Employment Service of Ukraine is widely regarded as a pivotal institutional actor in the realm of social business, owing to its implementation of a client-oriented approach in its interactions with citizens.

An overview of relevant literature on labour market regulation, demographic shifts, and the development of social entrepreneurship reinforces the theoretical framework proposed in this article. The research findings provide a solid basis for formulating adaptive, spatially oriented strategies aimed at fostering sustainable economic recovery, restoring human capital, and strengthening social cohesion. Such an approach is deemed essential for mitigating labour risks amid ongoing socio-economic instability.

Main Body of the Paper

The key factors influencing economic development in any country are the level of employment, the unemployment rate, and the interests of labour market participants. These elements determine the efficiency of labour resource utilisation and significantly affect the socio-economic stability of society. Ukraine's labour market reflects the broader challenges currently facing the country, while also revealing opportunities for future development. These problems are particularly acute in the context of a full-scale military conflict, which has led to the destruction of economic infrastructure and substantial long-term demographic shifts. As a result, the national employment balance has been disrupted, and social vulnerability among various population groups has intensified.

The demographic situation in Ukraine has a detrimental impact on the transformation of the national labour market, as evidenced by the critically low level of labour potential reproduction. According to official statistics, since 1990, when Ukraine's population exceeded 51.8 million, there has been a gradual and systematic decline in demographic resources, exhibiting signs of depopulation (see Figure 1).

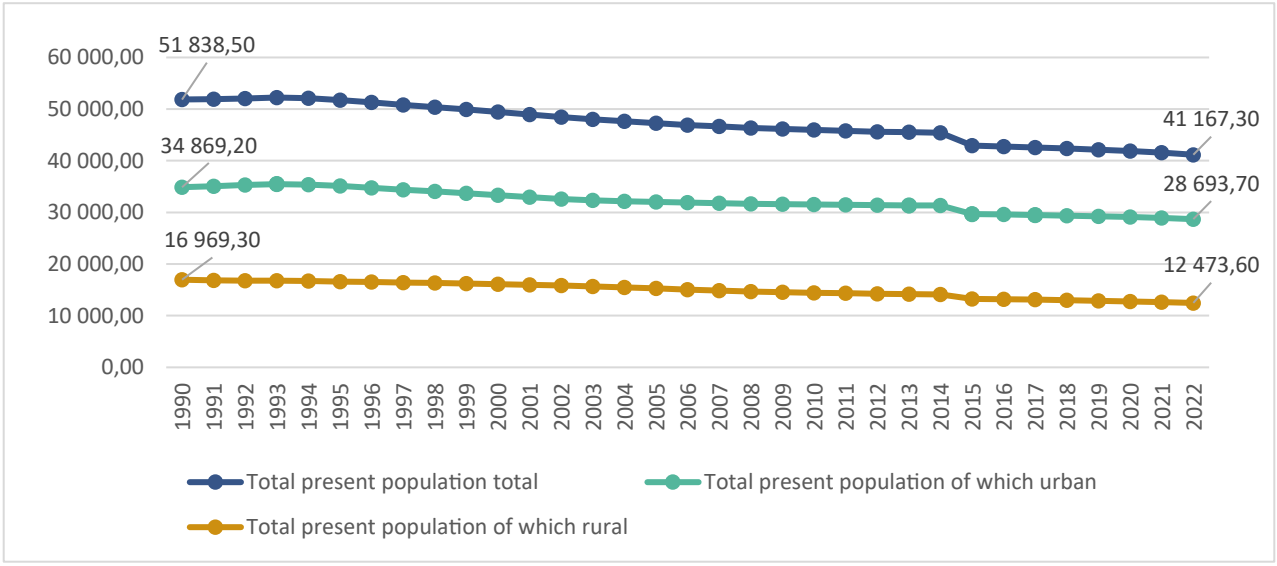


Figure 1. Dynamics of Ukraine's Present Population, 1990–2023
Source: State Statistics Service of Ukraine

The dynamics of Ukraine's present population indicate systemic labour resource threats. The process of population decline is neither temporary nor episodic but forms a stable long-term trend that directly affects the formation and reproduction of the national labour force.

The key causes of the demographic decline are cumulative and encompass a range of profound socio-economic shocks: the economic crisis of 1994–1996, the aftermath of the global financial crisis of 2008–2009, chronic socio-economic instability during 2014–2022 (including the Revolution of Dignity, the annexation of Crimea, and the conflict in eastern Ukraine), as well as the full-scale military invasion of the Russian Federation in Ukraine that began in 2022 and continues to this day (State Statistics Service of Ukraine).

The total population of Ukraine exhibits a persistent downward trend with annual fluctuations observed in both urban and rural segments. Specifically, as of 2022, the urban population has decreased by 6.2 million individuals, while the rural population declined by 4.5 million. The cumulative population decline since 1990 exceeds 10 million people, representing approximately 20% of the total population at the time of independence. This not only reflects a profound demographic crisis but also constitutes one of the most critical threats to national economic security.

Particularly alarming is the disruption of the simple generational replacement balance. The demographic dependency ratio for the working-age population (15–64 years) stood at 483 dependents per 1,000 working-age individuals at the beginning of 2022. This implies that, on average, every second working-age Ukrainian supports one dependent. Considering the impact of the full-scale war—including civilian and military casualties, disability predominantly affect-

ing the male population, and large-scale external migration—it can be asserted that the actual burden on the working population will increase significantly. This underscores the critical level of economic dependency of a substantial portion of the population on a limited labour resource.

Furthermore, according to data from the State Statistics Service of Ukraine, as of early 2022, the average age of the population was 42.2 years, indicating ongoing population aging and exacerbating imbalances in the structure of the labour force. Life expectancy at birth in 2021 was only 69 years, which is significantly lower than the average figures for Europe (State Statistics Service of Ukraine).

At the same time, since April 1, 2021, the retirement age for both women and men in Ukraine has been equalized and set at 60 years, creating additional challenges for the pension system amid a shrinking tax base.

Thus, an analysis of demographic dynamics in Ukraine justifies classifying depopulation as one of the key institutional risks to the national labour market. This risk is driven by population decline, aging, and the reduced reproductive capacity of the labour force, manifested in labour resource volatility. The instability of the demographic component directly contributes to labour market destabilization, exacerbates the problem of preserving existing labour potential, and signals a chronic deficit of national human capital.

Unresolved demographic issues contribute to the deepening of negative trends and pose a threat to the further deterioration of natural population reproduction processes, which in turn exacerbates the critical socio-economic situation in the country.

In this context, an analysis of labour resource volatility based on key demographic indicators provides grounds to assert that one of the main challenges in Ukraine's labour market regulation policy is the preservation of existing labour potential and the enhancement of employment levels amid labour resource instability.

Statistical data confirm this assertion: according to information from the State Statistics Service of Ukraine, the employment rate of the population aged 15–70 years fluctuated between 55.7% and 58.2% during the period from 2015 to 2021, without a clear trend of sustained growth or decline.

For instance, following the annexation of the Autonomous Republic of Crimea and the occupation of parts of eastern Ukraine, a slight decline in the employment rate from 56.7% to 56.1% was observed during 2015–2017. This was partially offset in 2018–2019, when the rate increased to 58.2%. However, the negative impact of the COVID-19 pandemic in 2020–2021 again led to a decrease in employment to 55.7%.

These fluctuations demonstrate the labour market's high sensitivity to external shocks and confirm employment instability amid overall demographic volatility (State Statistics Service of Ukraine).

Considering the prolonged war in Ukraine, the destruction of production capacities due to damaged infrastructure, the reduction in the number of enterprises caused by their inability to develop under crisis conditions, and energy supply challenges, the employment level of the population aged 15–70 has become increasingly vulnerable. Furthermore, military events have led to increased internal migration from territories near the frontline to safer regions, which distorts the labour market conditions in these safer areas. It is therefore logical that unemployment remains one of the most pressing issues in Ukraine.

Between 2000 and 2021, the unemployment rate in Ukraine exhibited significant fluctuations. In 2000, the unemployment rate was 12.4%, which decreased to 9.2% by 2004, reflecting a gradual economic recovery following the crisis transformations of the 1990s (State Statistics Service of Ukraine).

During this period, macroeconomic stabilization occurred, accompanied by increased investment, private sector development, and the creation of new jobs, which contributed to a reduction in unemployment. Labour market reforms, improvements in business conditions, and export growth also had a positive impact.

In 2007–2008, Ukraine recorded a minimum unemployment rate of 6.9%, highlighting a stable labour market, positive economic trends, and rapid GDP growth (USD 179.9 billion in 2008) (Minfin Index, n.d.). This was the result of business development, active expansion of foreign trade, and favourable reforms that improved the business climate and stimulated the private sector. Ukraine's economy showed positive development trends until the onset of the global financial crisis in 2008, after which the unemployment rate rose to 9.6% in 2009 (State Statistics Service of Ukraine, n.d.). The recovery period lasted approximately four years, with the unemployment rate decreasing by 1.9% to 7.7% by 2013. During the same period, Ukraine recorded its highest GDP at USD 183 billion (Minfin Index, n.d.).

Following the events of 2014, the unemployment rate in Ukraine rose again, fluctuating between 9.5% and 9.9%. In 2018–2019, a slight decrease was observed, with unemployment ranging from 8.6% to 9.1% (State Statistics Service of Ukraine). During the COVID-19 pandemic, unemployment increased to between 9.9% and 10.3% due to the implementation of quarantine restrictions, while the economy partially recovered and achieved a record nominal GDP of USD 199.77 billion in 2021 (Minfin Index).

Considering the above, it can be concluded that the unemployment rate in Ukraine between 2000 and 2021 exhibited a cyclical pattern, with periods of increase and decrease reflecting the impact of both internal transformations,

and external economic and political shocks. This underscores the need for an active state employment regulation policy to minimize the effects of crisis factors on the labour market, especially during wartime and post-conflict periods.

The labour market is an independent element of the market structure, facilitating the movement of goods and services, and interacting with other markets that influence labour supply and demand. At the same time, a crucial factor for the stable functioning of the labour market is the coordination of interests among its main participants — employees, employers, and the state — which determines employment levels, labour mobility, and social stability.

In this context, understanding labour resource volatility at the national level is a necessary condition for developing effective mechanisms for managing the spatial-territorial development of Ukraine. This requires the consideration of institutional and instrumental measures aimed at preventing labour resource challenges (Lanska and Mishchenko, 2020).

Accordingly, it is appropriate to construct a spatial-territorial hierarchical model of labour market regulation that reflects the interrelations between the state (macro level), regional (meso level), and local (micro and nano levels) governance. Such a model enables the formation of an integrated system of influence on employment, thereby facilitating more effective regulation (Figure 2).

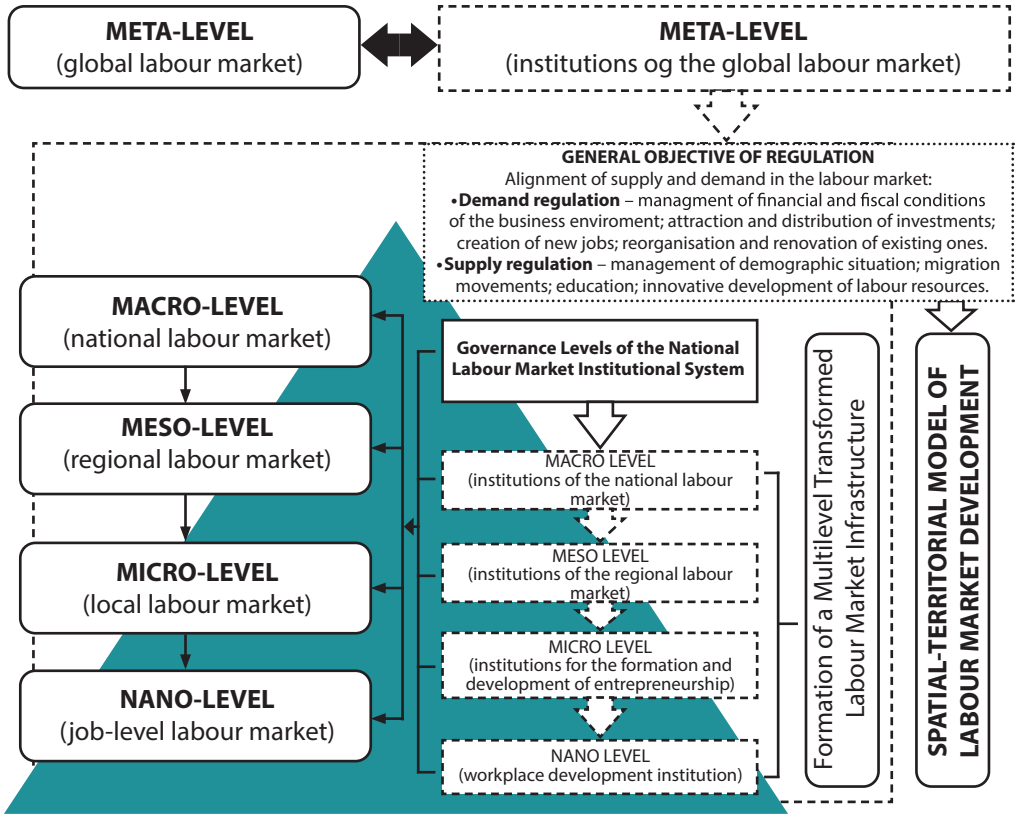


Figure 2. Spatial-territorial Hierarchical Model of Labour Market Regulation (author's model).
Source: developed by the author.

In this regard, the state must recognize the national challenges associated with labour resource volatility, and develop effective spatial governance mechanisms aimed at addressing the specific problems of individual regions. This, in turn, will contribute to the growth of economic potential, reduction of unemployment, and improvement of demographic conditions.

The outlined model entails analyzing the interrelations between different levels of labour market functioning — from the global (meta-level) to the local (nano- and micro-levels) — which allows for consideration of regional specificities and the institutional management system. Such an approach becomes especially relevant in the context of post-war transformation, where Ukrainian territories are undergoing changes influenced by political decisions and external factors.

Therefore, state policy should focus on identifying and overcoming the challenges of labour resource instability through the development of spatially oriented strategies tailored to various regions. At the same time, as an intermediary between employers and employees, the state must create conditions that ensure the right to work and maintain social equilibrium within the country.

Taking into account the characteristics of labour resource provision — such as the balance of supply and demand, as well as the structure and conditions of the labour market — it is appropriate to implement a classification of the labour market into three main categories: currently supplied labour market, prospectively supplied labour market, and volatile labour market (see Table 1).

Table 1. Spatial-Territorial Classification of the Labour Market

Source: Compiled by the author.

Territorial-Spatial Type of Labour Market	Classification by Labour Resource Potential	Characteristics
Currently Supplied Labour Market	Territories with a balanced supply and demand of labour force	– Relatively stable employment levels – Functioning labour market institutions at the meso and micro levels – Predictable demographic indicators – Low levels of labour migration
Prospectively Supplied Labour Market	Territories with employment growth potential	– Return of temporarily displaced persons – Activation of investment and development of new enterprises – Presence of an educational or youth labour reserve
Volatile Labour Market	Territories with a high degree of labour resource instability	– Significant imbalance between labour supply and demand – High levels of unemployment or seasonal employment – Mass labour migration (internal and external) – Demographic aging or consequences of armed conflict

Depending on the typology of the labour market based on spatial and territorial characteristics, the objectives of state policy in the field of employment regulation should reflect differentiated priorities that consider the specifics of labour resource availability and the level of socio-economic stability in the respective territories.

For example, currently supplied labour markets require policies focused on maintaining labour resource potential, balancing labour supply and demand, stimulating innovative forms of employment, and updating the professional and qualification structure. In contrast, volatile labour markets necessitate the application of crisis management tools in state regulation, such as retraining and upskilling programmes, tax incentives for businesses, support for micro-entrepreneurship and self-employment, and integration programmes for internally displaced persons.

Territories with prospectively supplied labour resources, representing the most complex type, may include areas that are undergoing or have undergone de-occupation and have experienced significant infrastructure destruction. These areas require comprehensive crisis-response measures aimed at demographic recovery and population reintegration. Such measures include employment-oriented infrastructure rehabilitation, demographic return and regeneration programmes, education and workforce interventions, and entrepreneurship support through grant schemes and tax preferences.

When the spatial-territorial classification of the labour market is combined with the hierarchical model of labour market regulation (Figure 2), the instruments of state influence can be adapted to each level of the hierarchy. The meta level ensures international integration, expert engagement, and access to financial mechanisms. The macro level contributes to strategic planning and resource allocation with spatial considerations in mind. The meso and micro levels define programmatic and human resource policies, while the nano level identifies local pressure points and workforce needs.

The nano level, or the labour market of individual workplaces at the lowest local tier, represents a fundamental component in post-war recovery. It is at the level of individual communities, families, small enterprises, and individual workers where the basic conditions for employment stabilization and the revival of economic activity are formed. The nano level enables rapid responses to local needs, the creation of adaptive jobs, and the reintegration into the labour force of those who have lost traditional employment opportunities due to the war.

In this context, entrepreneurship and self-employment play a particularly important role as key instruments for re-engaging people in economic activity. They contribute to the creation of new jobs, the development of microbusinesses, and the strengthening of community resilience at the nano level.

The spatial-territorial classification of the labour market proposed in Table 1 allows for the differentiation of Ukrainian regions based on the nature and stability of their labour resource potential. This provides a foundation for the development of targeted employment policies that reflect the specific characteristics of each labour market type.

This underscores the notion that the reconstruction of Ukraine's economic potential must be based on the principle of inclusivity, which involves engaging all actors — government, business, and civil society — in addressing labour resource volatility (Mishchenko and Kapranova, 2022). It is essential not only to acknowledge existing disparities, but also to create conditions for integrative processes among regions, including workforce exchange, expansion of economic opportunities, and the development of a mobile employment system. In this regard, effective spatial labour market regulation should become a key component of Ukraine's national strategy for demographic, social, and economic resilience.

Considering the aforementioned challenges, it is advisable to employ an organizational and economic model for labour market regulation in the regions under conditions of labour resource volatility. This model offers a post-war approach to reconfiguring the employment governance system. At its core (Figure 3) lies a spatial-territorial hierarchical model of labour market regulation, whose key feature is its conceptual transformation into a model of inclusive development of the regional labour market.

This approach facilitates effective interaction among all levels of governance through the integration of state policy institutions, regional development strategies, their targeted objectives, and the corresponding implementation mechanisms. Its realization enables development opportunities for all labour market actors.

Ensuring inclusive labour market development in the regions of Ukraine under conditions of labour resource volatility requires a sound regulatory state policy aimed at eliminating spatial disparities and unlocking the potential of regional economies. In this context, the meso level (regional level of governance) plays a system-forming role, as it is precisely at this level where key levers of influence on employment and the quality of labour potential are applied.

The main directions of labour market regulation at the meso level include enhancing labour mobility and competitiveness, implementing regional employment promotion programmes, minimizing the socio-economic consequences of unemployment, and institutionally strengthening regional executive authorities and employment centres. The activities of institutions at this level should be directed toward ensuring the openness of the regional economy, attracting investment, supporting entrepreneurship, fostering local initiatives, and creating conditions for sustainable employment growth and a reduction in regional unemployment.

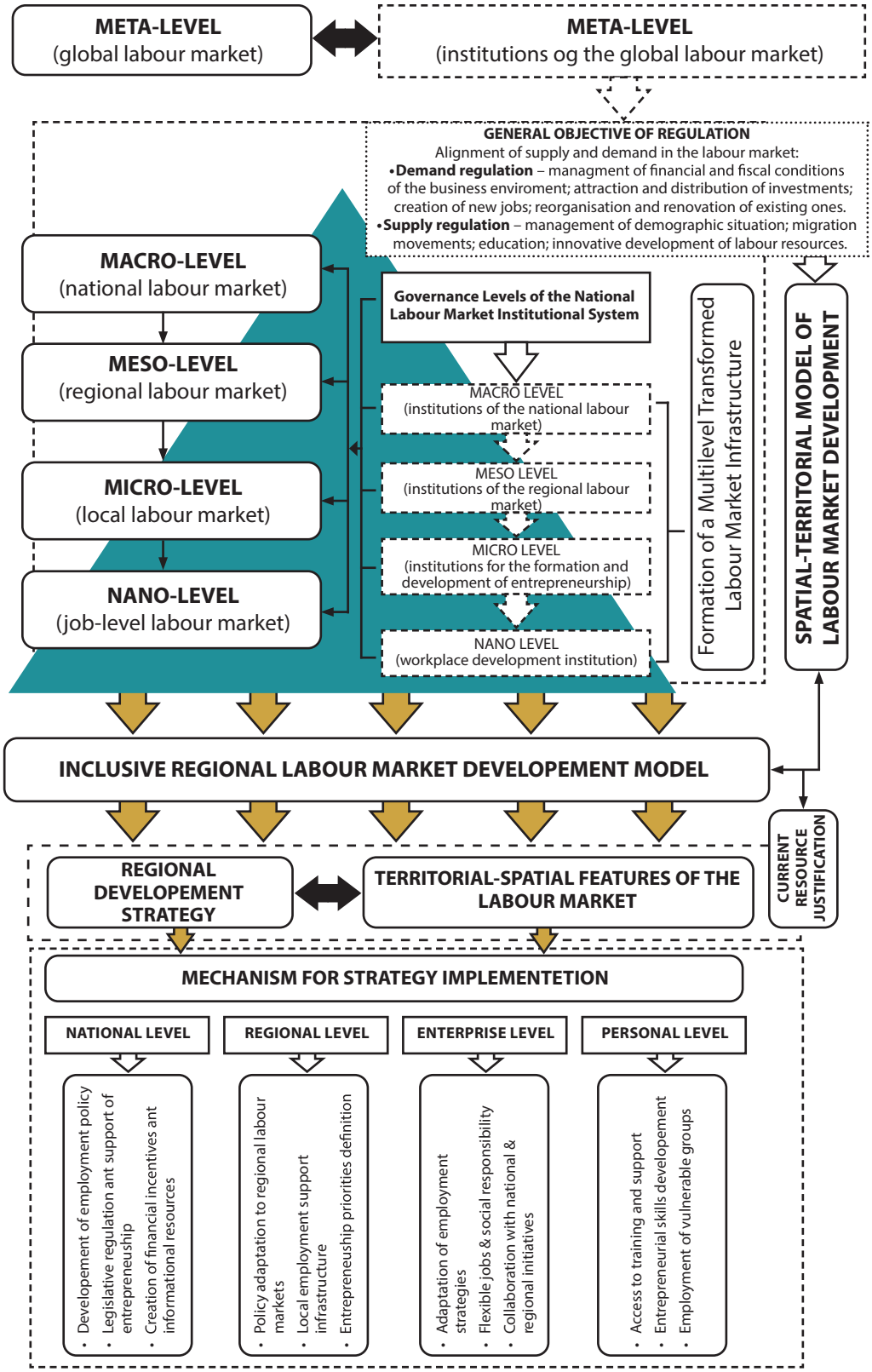


Figure 3. Comprehensive Spatial-Level Organizational and Economic Model of Labour Market Regulation

Source: Compiled by the author.

Within the framework of the spatial-territorial labour market model, the concept of inclusive development involves not only ensuring access to the labour market for a wide range of participants, but also expanding their opportunities — particularly through initiatives that promote increased personal income, youth and female employment, the integration of displaced persons, and the support of other vulnerable population groups.

The author's vision of the concept of inclusive development of the labour market in the regions of Ukraine under conditions of labour resource volatility is grounded in the understanding that traditional industrial production has suffered significant losses due to the war, resulting in the destruction or suspension of operations of large enterprises

across several territories. These trends necessitate a reorientation of regional policy towards the stimulation of innovative entrepreneurship, the development of the service sector, creative industries, and digital employment as alternatives or complements to traditional sectors. Such an approach will help mitigate the impact of labour resource volatility and enhance the resilience of regions to external and internal shocks.

The challenge of labour market regulation amid labour resource volatility is multifaceted; thus, it is essential to establish markers of an inclusive approach to balance labour supply and demand, including:

- The formation of a labour market population that aligns with the needs of the economy and is in demand.
- Ensuring freedom of entry and exit from the labour market for both employers and employees.
- Providing accessible and reliable information about the labour market and its prospects.

Considering these factors alongside the existing system of state labour market governance, a priority at the regional level is the effective forecasting and resource support of strategies for the inclusive development of the labour market in Ukraine's regions.

The restoration of Ukraine's economic potential requires the establishment of a high-quality and independent system of forecasting and resource justification, like European models, to develop realistic labour market development forecasts at the regional level and to define transformation goals for labour supply and demand across different time horizons.

The recommendations of this system should include several scenarios to be discussed in focus groups comprising local authorities, employers, trade unions, civil society organizations, and employment centres.

For the effective functioning of the comprehensive spatial-level organizational and economic model of labour market regulation, the use of diverse information sources and analytical methods is essential. Accordingly, the quality of forecasting and resource justification is ensured by utilizing:

- national statistical data complemented by long-term forecasts.
- regional data reflecting local development specifics.
- analysis of labour market actors' behaviour.
- scenario analysis models and macroeconomic modelling.
- expert evaluations and consultations with key stakeholders.

The combination of national and regional statistical data allows for the consideration of overall trends alongside the specifics of each region, which is critical for the development of targeted regional development strategies. Simultaneously, the application of scenario analysis and macroeconomic modelling enables forecasting labour market development under various conditions, including the consequences of the war, and assessing the impact of potential external and internal factors. This, in turn, facilitates the design of regional strategies that account for possible developments and minimize risks.

Expert evaluations and consultations with stakeholders become particularly important in the context of Ukraine's economic reconstruction after the war, where the activation of foreign investments and external support will play a key role in revitalizing the labour market and fostering sustainable development. These consultations enhance the quality and practical relevance of forecasts by allowing the consideration of social, political, and economic factors that may not be fully captured in statistical data.

The most effective tool is the analysis of labour market participants' behaviour, which enables a deeper understanding of the motivations, needs, and responses of employees and employers, facilitating more flexible and adaptive management of labour supply and demand. A criterion for data reliability is the establishment of a favourable regional information and statistical environment, characterized by comprehensive data collection and processing adapted to the maximum number of regional economic participants.

The analytical data from the forecasting and resource justification for the development of Ukraine's regions serve as targeted benchmarks for the comprehensive spatial-level organizational and economic model of labour market regulation (Figure 3). This model is based on coordinated actions among the state, local executive authorities, and local self-government bodies in implementing the concept of inclusive labour market development in Ukraine's industrial regions under conditions of labour resource volatility.

The implementation of such a model based on forecasting and resource justification will facilitate the formation of a flexible, adaptive employment management system capable of promptly responding to challenges such as demographic decline, structural employment imbalances, regional labour migration, and the consequences of armed conflict

in Ukraine. The model is oriented toward achieving long-term socio-economic resilience by considering the spatial specifics of territorial development, human capital potential, and the needs of local economies.

Accordingly, one of the key tasks of Ukraine's socio-economic development is the formulation of regulatory policies aimed at territorial development and the maximal integration of available labour resources into the economy, with the goal of establishing a socio-economic system whose level of development can reduce the country's demographic risks.

In this context, entrepreneurship gains particular importance as a key factor in the economic activation of territories by contributing to job creation, employment diversification, and the integration of vulnerable population groups into the labour market. Under conditions of labour resource volatility, entrepreneurship serves as a strategic tool for regional recovery, capable of enhancing the resilience of local economies, reducing dependence on external labour resources, and laying the foundation for sustainable development.

This issue gains particular relevance in the process of Ukraine's post-war economic recovery, where socio-economic challenges related to depopulation, migration, and unemployment call for new approaches to human capital development. In this context, small and medium-sized enterprises (SMEs) serve as the foundation for regional economic regeneration and constitute an important component of the spatial labour market model.

According to data from the Economic Recovery Centre and the State Statistics Service of Ukraine, over 99% of all enterprises in Ukraine in 2020 were SMEs (Chupryna & Yuzovytska 2019). SMEs are a key driver of economic development, influencing innovation, employment levels, and the stability of the socio-economic system.

At the same time, the entrepreneurial environment in Ukraine faces significant challenges stemming from economic and political instability, a high tax burden, a complex regulatory framework, and insufficient government support. These issues have been particularly exacerbated during the COVID-19 pandemic and the ongoing armed conflict since 2014.

The analysis of the dynamics of the total number of business entities and individual entrepreneurs (IEs) in Ukraine during the period 2014–2023 (Figure 4) reveals fluctuations that reflect the impact of both external and internal factors. Following a decline in 2016–2017 associated with economic instability, entrepreneurial activity began to recover from 2020; however, this recovery was significantly hindered by the military actions in 2022, which resulted in a 10.3% decrease in the total number of business entities. Nonetheless, in 2023, a notable revival of business activity was observed, with the number of individual entrepreneurs rising to a record level — exceeding 2 million.

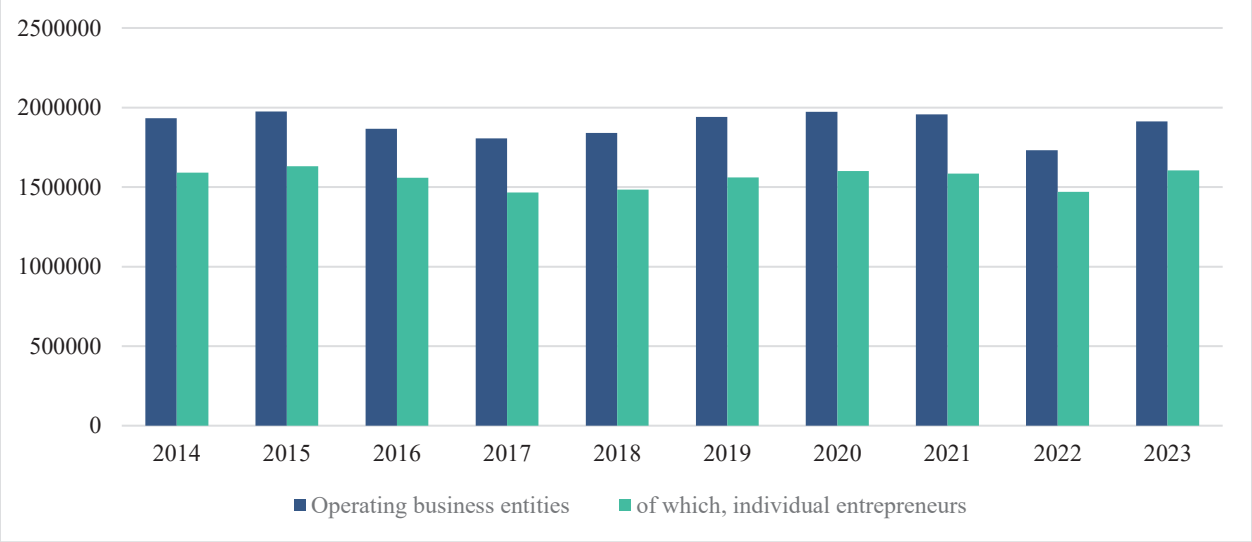


Figure 4. Dynamics of the Total Number of Operating Business Entities and Individual Entrepreneurs in Ukraine, 2014–2023

Source: State Statistics Service of Ukraine

Employment dynamics in the SME sector (Figure 5) confirm the stable role of small businesses in job provision. The share of employed individuals in individual entrepreneurship remained within the range of 27.9–30.2%, and in 2023 even increased to 31.93%, indicating the high adaptability of small enterprises under challenging conditions. Considering this, it can be concluded that SMEs perform a stabilizing socio-economic function, which is particularly important for overcoming crises and ensuring economic recovery.



Figure 5. Dynamics of the Total Number of Employees in Business Entities in Ukraine and the Share of Employees Working for Individual Entrepreneurs, 2014–2023

Source: State Statistics Service of Ukraine

Despite existing barriers, the entrepreneurial environment remains dynamic. The main obstacles to business development in Ukraine include a shortage of solvent demand, unpredictability of external and internal factors, state regulation, limited access to capital, regulatory complexities, high taxes, a deficit of qualified personnel, and competitor dumping. Nevertheless, the growth in the number of new enterprises in 2023 indicates sustained confidence within the business community and potential for further development.

A comparative analysis with the experience of leading economies, particularly Germany — where SMEs constitute 99.7% of all enterprises, generate 57% of added value, and ensure a high level of exports — underscores the significance of SMEs in shaping a competitive and socially resilient economy. This highlights the potential of Ukrainian SMEs for integration into global economic processes, as well as their role in job creation and social stabilization (Naumenko & Hrabko 2021).

Considering the presented statistical data and analytical findings, it can be concluded that the development of SMEs in Ukraine constitutes a crucial component of the strategy for economic recovery and labour market stabilization. The spatial-territorial classification of the labour market enables the development of more adaptive and regionally tailored approaches to supporting SMEs, thereby enhancing their effectiveness in both stable and crisis-affected regions.

Therefore, the formation of a favourable entrepreneurial environment that takes into account territorial specificities, alongside state support, simplification of regulatory procedures, and expanded access to financial resources, should become key priorities of policies aimed at strengthening the role of SMEs in economic recovery and reducing labour-related risks in Ukraine.

Ensuring a balance between labour demand and supply amid labour resource volatility is only possible through the activation of economic participation among the population. This involves not only expanding employment opportunities but also fostering a motivational environment for productive work at the level of local labour markets — that is, at the nano-level, which encompasses the immediate employment context: the workplace, the workforce, the enterprise, and the community.

In the context of post-war reconstruction and demographic decline, local entrepreneurial initiatives, particularly those with a social orientation, act as key generators of jobs at the nano-level. Entrepreneurship creates new points of economic inclusion in regions facing high labour risks — depopulation, migratory losses, and chronic unemployment.

Beyond stimulating economic activity, entrepreneurship performs a significant social function: it facilitates the integration of marginalized population groups into productive work, promotes the formation of new social values, and fosters environments of interaction, trust, and social capital. Especially important in this context is the development of social entrepreneurship—an innovative business model that combines the achievement of social impact with economic efficiency.

Unlike traditional businesses, social enterprises focus not only on profit, but also on addressing specific socially significant issues, such as employment for veterans, persons with disabilities, internally displaced persons (IDPs), women with children, and individuals approaching retirement age. This contributes to social adaptation, reintegration of vulnerable groups, and the reduction of social tensions, which is critically important in the post-war period.

For Ukraine, undergoing profound demographic, economic, and security transformations, social entrepreneurship acquires particular significance as a tool for mobilizing human capital.

Considering the above, the initial stage of implementing the concept of inclusive labour market development can be characterized as the phase of building the labour market in Ukraine's industrial regions under conditions of labour resource volatility, within the framework of ensuring their economic security. This involves preserving existing and creating new highly efficient jobs.

Targeted state support for social entrepreneurship emerges as especially important in this context, serving as an effective mechanism to overcome labour resource instability in local markets. Social enterprises, particularly in the post-war reconstruction period, are capable not only of generating new employment opportunities for vulnerable groups (veterans, internally displaced persons, women, persons with disabilities) but also of increasing economic activity in communities facing high risks of depopulation and unemployment.

Institutional support for the development of social entrepreneurship should be an integrated component of the strategic roadmap, as it aligns with the objectives of the strategic transformation of the labour market: the formation of local economic growth points, activation of labour potential, and overcoming social disintegration.

The organizational and economic mechanism for regulating the labour market of Ukraine's regions under conditions of labour resource volatility entails not only structural and service changes, but also a clearly articulated policy of state stimulation for socially oriented businesses, which generate social impact alongside economic growth. This approach lays the foundation for a new institutional paradigm where support for social entrepreneurship is recognized not as episodic aid, but as a systemic tool of state employment regulation.

The experience of EU countries confirms the effectiveness of social entrepreneurship. For instance, the United Kingdom hosts over 70,000 social enterprises with nearly 1 million employees and generating over £24 billion in GDP. As of 2019, 68% of these enterprises supported vulnerable groups, 44% directly employed such individuals, and 28% operated in depressed regions. In Poland, 29,535 social enterprises were active in 2019, employing 428,700 people, while in Serbia, in 2015, 4,273 individuals worked in social enterprises, accounting for 0.25% of total employment (Shvets, 2020).

Social entrepreneurship has become an important tool not only for economic growth but also for achieving sustainable development goals. In particular, it contributes to reducing unemployment, creating new jobs for vulnerable groups, and strengthening social integration, which directly impacts the development of an inclusive labour market.

Despite the challenging conditions of martial law, several initiatives supporting social entrepreneurship are being implemented in Ukraine. For example, the International Renaissance Foundation, within the framework of the "EU-4USociety" project jointly with the EU, conducts the "Crowdfunding for Social Entrepreneurship" competition. Its aim is to strengthen existing social enterprises, promote them, and attract community funds to create or expand projects (Bohatska, 2023). Support is also provided by the Eastern Europe Foundation, the Innovation Development Fund, the Social Investment Fund, and international partners. Among them is the EUnlocking project, implemented by organizations from Germany, Ukraine, and Moldova with the support of the European Union (EU4Youth) (Bohatska, 2023).

However, the further development of social entrepreneurship in Ukraine is significantly hindered by an imperfect legislative framework, as well as the absence of clear regulatory mechanisms and systematic state support. These factors constrain the accessibility and attractiveness of social business. As a result, the capacity of social enterprises to create stable jobs — particularly for persons with disabilities and veterans — is limited, which in turn slows the integration of social entrepreneurship into the national economy and reduces the effectiveness of post-war recovery.

In this context, studying and adapting international experience in supporting social entrepreneurship to Ukrainian conditions should become priority directions of state policy aimed at overcoming labour resource volatility (Mishchenko, 2023). Only on the basis of a clearly defined, adaptive, and proactive action algorithm can an effective response to labour market dynamics and demographic reproduction challenges be achieved. By ensuring the availability of effective tools and support mechanisms, the state will be able to substantially accelerate the process of economic recovery and promote sustainable social development.

Effective development of the labour market in Ukraine during the wartime and post-war periods requires a differentiated policy to support social entrepreneurship that takes regional specificities into account. A set of effective tools is needed to adapt to volatility, unlock the potential of promising territories, and create a new economic paradigm based on the principles of inclusion and resilience.

Institutional support for the development of social entrepreneurship within the framework of inclusive labour market development should consider the principles of client orientation, which today serve as a key factor in the interaction system between state institutions, business, and civil society. For social enterprises, which often operate under increased risks and resource constraints, a client-oriented approach is particularly important as a means to adapt to an unstable socio-economic environment.

In this context, the State Employment Service of Ukraine can perform the function of an institutional provider of support for social entrepreneurship, ensuring comprehensive assistance and incentivizing initiatives focused on social

impact. One example of such activity is the implementation of the "Made in Ukraine" project, which has become an important element of the entrepreneurship recovery strategy in the post-war reconstruction period. The initiative aims to support SMEs, develop domestic production, enhance the competitiveness of national products, and create new jobs. The project also encompasses business scaling, infrastructure development, access to external markets, support for innovation and sustainable development, as well as educational programmes aimed at improving workforce qualifications (State Employment Service of Ukraine 2025).

Given the above, expanding the functionality of the Employment Service to support social entrepreneurship can be implemented through the introduction of customized service packages tailored to the specific needs of social enterprises. The Employment Service possesses information databases on the quantitative and qualitative composition of the unemployed population at both national and spatial-territorial levels, enabling more accurate identification of the potential and integration pathways for socially vulnerable groups into productive employment. This approach allows for:

- timely access for social enterprises to relevant information regarding funding sources, tax incentives, as well as opportunities to participate in state and regional support programmes.
- personnel support through professional recruitment, retraining, and targeted employment of individuals from socially vulnerable categories.
- implementation of compensatory and motivational mechanisms that stimulate the creation of new socially oriented enterprises, the development of innovative employment models, and the engagement of youth in entrepreneurial activities.

Considering the increasing importance of youth entrepreneurship within the structure of regional labour markets, the compensatory and motivational package should include specific preferences for young people capable of generating innovative directions in social entrepreneurial activities and creating knowledge-intensive jobs.

The combination of a client-oriented approach with institutional support for social entrepreneurship forms a new paradigm of the service model of state labour market governance. In this model, social entrepreneurship is not a marginal phenomenon, but an integrated element of state policy aimed at achieving inclusiveness, sustainable development, and social impact in regions most affected by the war and labour resource instability.

Thus, the implementation of a conceptual strategy for the inclusive development of the labour market under conditions of labour resource volatility requires a clearly coordinated state policy to support social entrepreneurship. The State Employment Service, possessing unique data on the needs and reserves of the labour market, can become an effective institutional provider of support for social enterprises through the introduction of customized services. This approach will ensure not only an increase in employment levels, but also the integration of vulnerable population groups into productive economic activities, contributing to the formation of a new type of labour potential—oriented towards innovation, sustainability, and social responsibility.

Based on the spatial-territorial classification of labour markets, recommendations for supporting social entrepreneurship have been identified for each type of territory (see Table 2).

Table 2. Recommended Measures for Supporting Social Entrepreneurship Depending on the Type of Labour Market

Source: Compiled by the author.

Territorial-Spatial Type of Labour Market	Recommended Measures	Expected Results
Currently Supplied Labour Market	– Financial support for scaling up social enterprises (grants, incentives). – Formation of clusters and partnerships at meso- and micro-levels. – Digitalization of services, registration, certification, and monitoring. – Establishment of local funds and attraction of donor financing.	– Expansion of social enterprises. – Increase in employment and provision of social services. – Strengthened cooperation and resource sharing. – Improved transparency and efficiency. – Institutional stability and long-term support.
Prospectively Supplied Labour Market	– Incubators and accelerators for youth, veterans, and IDPs. – Educational programmes and dual training for social entrepreneurs. – Attraction of social capital: impact investing, public-private partnerships. – Brand development, export orientation, and economic diplomacy.	– Boosted entrepreneurial activity among vulnerable groups. – Youth engagement. – Skilled workforce development. – Attraction of new financial resources. – Increased international recognition and competitiveness.
Volatile Labour Market	– Priority state funding (grants, subsidies for veterans, IDPs, persons with disabilities). – Preferential taxation (holidays, discounts). – Preferential lending, state guarantees for crowdfunding. – Regional support centres (ASCs, local communities). – Integration of social entrepreneurship into post-war recovery strategies.	– Growth of social entrepreneurship in de-occupied communities. – Favourable conditions for creation and development of social enterprises. – Improved access to financing. – Expanded local support networks. – Social entrepreneurship as a driver of sustainable recovery and stabilization.

The proposed territorial-spatial typology of the labour market enables the differentiation of policies aimed at promoting social entrepreneurship, taking into account the level of labour resource availability across regions. Accordingly, effective management of social business development should be based on a multi-level institutional approach adapted to the specific type of labour market.

In currently secure labour markets, where institutional infrastructure is already partially developed, it is advisable to strengthen the horizontal integration of entrepreneurial actors. The main focus should be placed on scaling up operations, process digitalization, the development of local clusters, and the implementation of systematic monitoring. Institutional stability in these areas allows for a concentration of efforts on the creation of long-term, high-efficiency models of social entrepreneurship.

In potentially secure labour markets, the key factor is the development of human capital and the creation of initial conditions for entrepreneurial activity. Educational programmes for aspiring social entrepreneurs, incubators and accelerators for youth, veterans, and internally displaced persons (IDPs), as well as the attraction of social investment capital, provide a foundation for the sustainable development of such territories. In this context, public-private partnerships and impact investing—combining economic profitability with social impact — are particularly relevant.

In regions with volatile labour markets — particularly in de-occupied territories — there is a critical need for the prioritized allocation of state resources to rapidly establish a supportive environment for social entrepreneurship. Expanding support networks, creating regional centres for the development of social enterprises, implementing preferential taxation, and offering grants and concessional loans become essential instruments. Simultaneously, the integration of social entrepreneurship into post-war recovery strategies provides these regions with an opportunity to transform social initiatives into drivers of local economic revitalization.

At the nano-level, this typology not only serves as the operational foundation of the labour market but also functions as a mechanism for direct interaction with the workforce. It is here that motivation for employment is shaped, individual economic participation takes place, and community engagement in the creation of new jobs is activated. In this context, social entrepreneurship acts as a tool for the inclusion, adaptation, and reintegration of the labour force — particularly vulnerable groups such as veterans, youth, internally displaced persons, and women with children.

Thus, linking the territorial labour market type with a multi-level model of support for social entrepreneurship lays the groundwork for developing a differentiated public policy adapted to the conditions of specific communities, regions, or economic zones. This approach not only increases the effectiveness of labour market interventions but also contributes to building an inclusive economic system capable of withstanding the long-term challenges Ukraine faces because of the full-scale war.

Under current conditions characterized by profound labour resource volatility, demographic regression, high unemployment, and a significant share of economically inactive population, the development of social entrepreneurship emerges as one of the key instruments for minimizing labour risks and restoring the country's economic potential. Due to their dual nature — both economic and social — social enterprises are well-positioned to respond effectively to structural imbalances in the labour market, stimulate local economies, and contribute to the regeneration of human capital.

As adaptive organizations, social enterprises can serve as catalysts for the revitalization of economic activity within communities by addressing local problems. Their operations are aimed not only at meeting socially significant needs but also at strengthening internal consumer demand, which, in turn, triggers multiplier effects across related sectors. Increasing employment at the community level thus becomes not only a means of mitigating the consequences of war but also a mechanism for transforming the economic model — from recovery to sustainable development.

Social entrepreneurship acquires particular significance in the context of labour integration for members of socially vulnerable groups. Through flexible forms of employment, the possibility of individualized adaptation of working conditions, and support for professional rehabilitation processes, social enterprises promote the inclusion of individuals who have partially lost their working capacity or find themselves in crisis life circumstances. This model of employment allows social entrepreneurship to be viewed not only as a mechanism for job creation, but also as a tool for restoring the functionality of human capital and slowing down demographic decline.

At the same time, the proliferation of social entrepreneurship practices stimulates the formation of a new economic paradigm — one oriented toward long-term social outcomes, ethical business conduct, environmental responsibility, and institutional resilience. In the post-war context, this contributes to shaping a social contract in favour of a more equitable, solidarity-based, and inclusive economy, in which principles of social responsibility are integrated into economic activity at all levels.

At the regional level, social entrepreneurship plays a key role in stabilizing the labour potential and restoring demographic balance. The creation of jobs, particularly for young people, prevents migration outflows, stimulates the formation of new households, and contributes to the retention of labour resources in local communities. This not only reduces labour-related risks but also creates conditions for the economic self-sufficiency of communities that have suffered significant losses because of hostilities.

The environmental dimension of social entrepreneurship is also gaining importance. The implementation of environmentally oriented innovations — in waste recycling, energy conservation, and resource restoration — not only improves environmental quality but also creates new jobs and attracts investment in the green economy. For regions with destroyed infrastructure, these directions can serve as focal points for concentrating resources, human capital, and new technologies, ensuring synergy in economic, social, and environmental recovery.

In addition, social enterprises contribute to strengthening social cohesion by developing horizontal networks of trust, enhancing citizen participation in decision-making and project implementation, and establishing effective cooperation between business, government, and civil society. In post-war societies, such social capital is no less important than financial or infrastructural resources, as it determines the capacity for mobilization, self-organization, and resilience in the face of challenges.

Thus, social entrepreneurship plays a multifunctional role in recovery processes: it not only minimizes labour-related risks but also lays the foundation for a sustainable, equitable, and innovative economy. Taking into account the spatial characteristics of the labour market, the institutional capacity of communities, and the socio-demographic profile of the population enables the transformation of social entrepreneurship into an effective tool for economic recovery and modernization policy in post-war Ukraine.

Conclusions

The article presents a comprehensive analysis of the labour resource situation in Ukraine based on population dynamics from 1990 to 2022, which reflects long-term demographic challenges and a gradual decline in the country's labour potential. These trends underscore the need to implement new approaches to labour market regulation that are adaptive to the dynamic socio-economic changes caused by the war and post-war recovery.

The proposed spatial-territorial hierarchical model of labour market governance (Figure 2) includes macro-, meso-, micro-, and nano-levels, ensuring policy integrity and coordination in the field of employment. This model provides a theoretical framework for a comprehensive approach that considers the geographic, economic, and social specificities of various regions of Ukraine, contributing to more efficient labour resource management.

The spatial-territorial classification of the labour market, presented in Table 1, allows for a systematic differentiation of markets based on stability, structural features, and resource potential. This methodological approach highlights the necessity of developing differentiated employment policies tailored to the unique challenges of individual regions — a particularly relevant priority under the conditions of intensified labour resource volatility, demographic change, and post-war recovery. Implementing such regionally sensitive strategies can enhance the effectiveness of state interventions and promote sustainable development at both the local and national levels.

The constructed complex spatial-level organizational and economic model of labour market regulation (Figure 3) integrates institutional mechanisms and economic instruments aimed at reducing labour risks and increasing workforce adaptability. A crucial factor in balancing labour demand and supply is the activation of local economic participation, where social entrepreneurship plays a key role as a mechanism for job creation and social integration of vulnerable groups. This form of entrepreneurship has the potential to combine social impact with economic efficiency, contributing to the mitigation of war-related social consequences and demographic challenges.

The effectiveness of social entrepreneurship support that accounts for the territorial specificities of labour markets is a crucial condition for the sustainable recovery of regional economies. For this reason, a set of recommended measures for supporting social entrepreneurship depending on the type of labour market is proposed (Table 2). The State Employment Service of Ukraine is considered as an institutional provider of support services for social business. This approach appears promising, especially considering the potential of this institution in collecting and analyzing labour market needs. In turn, the client-oriented approach of the Service, adapted to the characteristics of social enterprises and vulnerable population groups, may enhance access to resources, information, human capital support, and incentive mechanisms. This could contribute to increased employment, the formation of stable social capital, and the development of innovative employment models.

The article also emphasizes recommendations for social entrepreneurship support measures, differentiated by labour market type. This approach aims to increase labour market inclusiveness, expand employment opportunities for vulnerable groups, and stimulate sustainable development of regional economies.

Overall, integrating the proposed models and classifications into the development of state policy can ensure the formation of adaptive, spatially oriented strategies capable of achieving sustainable economic recovery, social cohesion, and human capital restoration. Such an approach is a crucial condition for minimizing labour-related risks and transforming Ukraine's labour market under current conditions of socio-economic instability.

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1.2. SOCIAL AND ECONOMIC STABILITY IN UKRAINE: THE ROLE OF SOCIAL ENTREPRENEURSHIP IN TIMES OF CRISIS

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Abstract. *The article examines the role of social entrepreneurship in ensuring Ukraine's socio-economic stability in times of crisis. In the context of contemporary geopolitical challenges, which have significantly affected the country's economy, social entrepreneurship is an important tool for stabilisation, combining economic interests with the resolution of social problems. The study focuses on analysing the impact of social entrepreneurship on maintaining economic activity, creating jobs for vulnerable groups such as internally displaced persons, people with disabilities, women and young people, as well as reducing unemployment and social tension. The study is based on a qualitative analysis of secondary data collected from various sources, including reports from international organisations, scientific articles, and analytical studies. The methodology includes content analysis, which allows for the identification of the key trends and challenges facing social entrepreneurship in Ukraine. Case studies are also used to illustrate successful examples of social enterprises that have adapted to crisis conditions. The article discusses how social enterprises demonstrate high adaptability to crisis conditions through the implementation of innovative approaches such as digitalisation, flexible management models, and diversification of activities. The interconnection between social entrepreneurship and crisis management contributes to the formation of sustainable economic models that combine social and economic goals. Social enterprises are becoming important partners of the state in the implementation of social policy, reducing the burden on the budget and ensuring the basic needs of citizens. The results of the study show that social entrepreneurship in Ukraine performs an important stabilising function, contributing to the preservation of economic activity and the integration of vulnerable groups into social life. Social enterprises demonstrate the ability to respond quickly to changes in market conditions, maintain competitiveness, and ensure business continuity. For the full integration of social entrepreneurship into the crisis management system, a proactive state policy is needed, including regulatory and legal support, access to financing, development of institutional infrastructure, and educational programmes. This will not only allow for a response to current challenges but also lay the foundations for sustainable and inclusive development in the future.*

Keywords: *social entrepreneurship, crisis management, economic stability, innovation, employment.*

Introduction

In the current conditions of geopolitical instability, which has significantly affected Ukraine's economy, social entrepreneurship is becoming particularly important as a tool for ensuring socio-economic stability. The purpose of this article is to examine the role of social entrepreneurship in Ukraine during the crisis, in particular its impact on maintaining economic activity, creating jobs for vulnerable groups of the population, and reducing unemployment and social tension.

The study is based on a qualitative analysis of secondary data collected from various sources, including reports from international organisations, scientific articles, and analytical studies. The methodology includes content analysis, which allows identifying key trends and challenges facing social entrepreneurship in Ukraine. Case studies are also used to illustrate successful examples of social enterprises that have adapted to crisis conditions.

A review of the literature shows that social entrepreneurship is an important mechanism for ensuring socio-economic stability, combining economic interests with the resolution of social problems (Demchuk, 2022; Hodgson, 2023). Initiatives in the field of innovation and digital technologies demonstrate examples of adaptation to new conditions and the ability of businesses to respond quickly to challenges (Reuters, 2024; Wired, 2023). Analytical studies (OECD, 2024; CEPR, 2025) emphasise that the development of small and medium-sized businesses during periods of instability contributes to economic stability, supports employment, and creates the conditions for future growth.

This study therefore aims to examine the relationship between social entrepreneurship and crisis management, which is critical for the formation of a sustainable economic system in Ukraine.

Contemporary geopolitical challenges have significantly impacted Ukraine's economy, changing the conditions for business, the labour market, and the financial system. According to estimates (Minfin Index, 2025), a transformation of production chains has affected the structure of GDP and the dynamics of entrepreneurship development. In such

conditions, employment problems are becoming more acute, increasing the risks of poverty and economic vulnerability of the population (ILO, 2024; Obrizan, 2022).

Against this backdrop, entrepreneurship serves as a tool for maintaining economic activity and stability in communities. Social entrepreneurship allows for the combination of solving social problems with job creation and revitalisation of the local economy (Demchuk, 2022; Hodgson, 2023). Initiatives in the field of innovation and digital technologies demonstrate examples of adaptation to new conditions and the ability of businesses to respond quickly to challenges (Reuters, 2024; Wired, 2023).

Analytical studies (OECD, 2024; CEPR, 2025) show that the development of small and medium-sized businesses during periods of instability contributes to economic stability, supports employment and creates conditions for future growth. Entrepreneurship plays a stabilising role in times of crisis, helping the economy to adapt and meet domestic needs.

Ongoing geopolitical instability has led to significant transformations in the functioning of Ukraine's economy, creating new challenges for business development, the labour market and the preservation of social stability. These challenges include the following (Fig. 1):

All the challenges shown in Fig. 1 together create a complex backdrop for the economy to work in, setting new ways for both individuals and society to adapt. Increased pressure on the labour market, combined with social transformations, necessitates a thorough analysis of structural shifts in the economy and the search for effective solutions to stabilise the situation.

According to data (Minfin Index, 2025), GDP declined in 2023–2024 because of reduced production, lower exports and weaker domestic demand. Analytical reports (OECD Economic Surveys, 2025; URTF, 2024) confirm that the decline in economic activity in key sectors is accompanied by a decrease in the investment attractiveness of regions.

The processes taking place in the labour market require special attention. According to data (ILO, 2024), the country has lost about five million jobs, which has significantly affected the level of employment and income of the population. Research (Obrizan, 2022) indicates that job losses are accompanied by internal migration, which creates an additional burden on the regions to which people move in search of employment opportunities. This exacerbates imbalances in the labour market and contributes to an increase in poverty among the population.

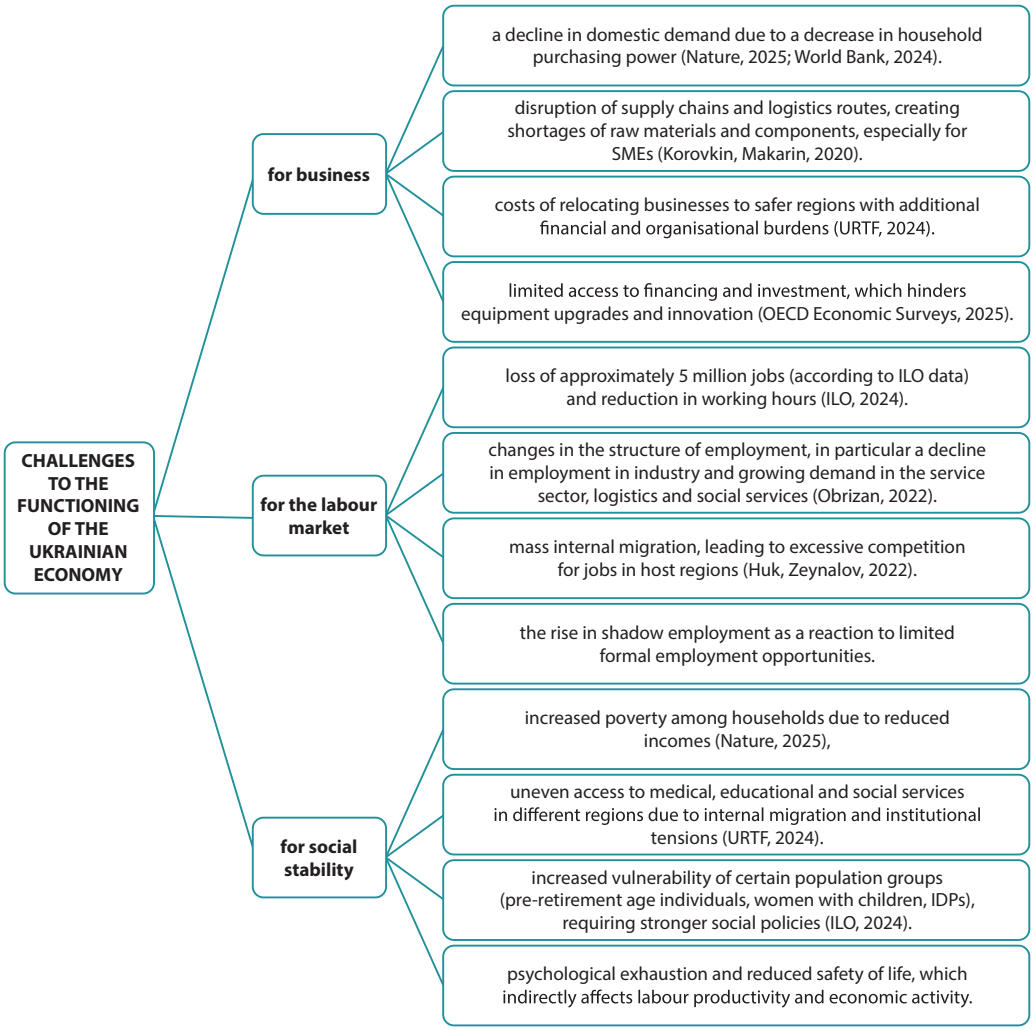


Fig. 1. Challenges to the Functioning of Ukraine's Economy

Regional disparities in Ukraine's economic development, according to the findings (Huk, Zeynalov, 2022), have taken on a new character in the context of geopolitical instability. Some territories are facing problems of industrial decline, falling employment rates and infrastructure destruction, which complicates the recovery of economic activity. At the same time, other regions are receiving internally displaced persons, which requires a balanced policy of providing housing, medical and educational services, as well as creating new jobs.

A separate problem remains the destruction of production chains and supply networks, which affects the efficiency of enterprises (Korovkin, Makarin, 2020). Reduced availability of resources and logistics services limits production capacity, which is particularly critical for small and medium-sized businesses with limited reserves for adaptation.

In addition to economic challenges, an important aspect is the social impact of the crisis, which manifests itself in the growth of vulnerable population groups and increased social inequality. According to Nature (2025), economic instability has a lasting effect, affecting the financial stability of households, access to basic services and opportunities for the professional fulfilment of citizens.

In the context of contemporary socio-economic challenges, entrepreneurship plays a stabilising role, combining the economic interests of business with the tasks of social responsibility and community support. An analysis of entrepreneurship development in Ukraine shows that small and medium-sized enterprises, as well as social entrepreneurship initiatives, are the basis for economic adaptation in times of instability (OECD, 2024; CEPR, 2025).

One of the important mechanisms for ensuring socio-economic stability is social entrepreneurship, which combines job creation with addressing social needs (Demchuk, 2022; Hodgson, 2023).

By performing its functions, social entrepreneurship creates a certain mechanism for sustainable development, which is shown in Fig. 2:

- social – addressing social issues in the community (employment for people with disabilities, providing social services, promoting inclusion);
- economic – generating income through the sale of goods/services, involving vulnerable groups in economic life.
- innovative – implementation of non-standard solutions to social problems.
- stabilisation – reducing social tension in communities.
- educational – developing a culture of responsible business and building trust within the community.

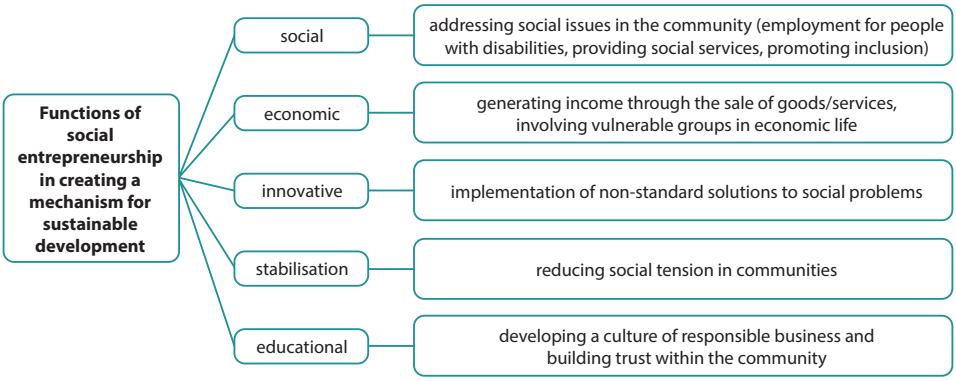


Fig. 2. Functions of Social Entrepreneurship in Creating a Mechanism for Sustainable Development

What social needs does social entrepreneurship address?

- employment of vulnerable groups (IDPs, people with disabilities, young people, women with children);
- provision of accessible social services (care for the elderly, children, persons with disabilities);
- rehabilitation and integration of people after crisis situations.
- developing the local economy by creating economic opportunities in communities.
- improving financial literacy and entrepreneurial skills among the population.

What social entrepreneurship offers community:

- jobs for vulnerable groups.
- social services and goods at affordable prices.
- reducing social tension.
- increasing community cohesion.

business:

- new markets through a combination of social and economic missions.
- social image and consumer confidence.
- access to grants, preferential programmes and partnerships.
- attracting motivated, value-oriented employees.

the state:

- reducing social welfare costs through employment of vulnerable groups.
- development of SMEs and tax revenues.
- stimulating local economic development.
- performing social functions without a significant budgetary burden.

Research emphasises that the development of social entrepreneurship not only mitigates the effects of unemployment but also supports the integration of vulnerable groups into the labour market by creating opportunities for professional fulfilment in community initiatives and local projects (Hodgson, 2023).

At the same time, innovative entrepreneurship demonstrates examples of resilience in difficult conditions. Startups in the field of technology and digital solutions quickly adapt to changes in the environment, create new markets, and contribute to the preservation of employment (Reuters, 2024; Wired, 2023). As noted by Hrebeshkova et al. (2025), a study of Ukrainian companies confirms that flexibility, innovation, and the ability to make quick decisions are key characteristics of businesses that remain resilient during crises.

Business digitalisation is particularly important, as according to data from the OECD (2024), it allows companies to reduce costs, optimise processes, and enter new sales channels even with limited physical access to markets. The development of digital platforms and technological solutions preserves jobs, creates new forms of employment, and allows businesses to remain competitive.

Investments in human capital and scientific development are seen as another tool for improving economic sustainability. Research (Bezvershenko et al., 2025) confirms that innovative activity by enterprises and participation in scientific projects contribute to improving business sustainability, expanding opportunities for the development of high-tech industries and creating new jobs.

Furthermore, according to the findings (Audretsch et al., 2023), the loss of entrepreneurial activity as a result of crises is one of the factors that exacerbates a country's economic losses. Therefore, stimulating the development of entrepreneurship, through SME support programmes, creating favourable conditions for start-ups and providing access to finance, are critical measures for supporting Ukraine's economic stability in times of uncertainty.

Entrepreneurship in Ukraine therefore performs a multi-level function, helping the economy adapt to new challenges, providing employment for the population, and promoting stability in communities. Table 1 provides examples of social entrepreneurship in Ukraine.

Table 1. Examples of Social Enterprises in Ukraine

Name	City	Social mission
Good Bread from Good People	Kyiv	A bakery where people with mental disabilities work. Some of the products are donated to the military and war victims.
WoodLuck	Lviv	A furniture workshop that employs veterans and people recovering from addiction.
Vbrani	Various regions	Knitted items created by elderly women. Project by the NGO "Old Age for Joy".
Veterano Pizza	Kyiv and other cities	A chain of pizzerias founded by ATO veterans. It employs veterans and supports their integration.
Nut House	Lviv	A confectionery that allocates 40% of its profits to supporting women in crisis situations.
Lady Di Atelier	Ukraine	An atelier where scarves are created with prints designed by people with disabilities. The authors receive royalties.

These examples show that social business can be innovative, profitable, and deeply humane at the same time.

The current socio-economic crises in Ukraine have brought to the fore the search for new models of economic stabilisation, where social entrepreneurship and crisis management have become interlinked mechanisms for sup-

porting employment, developing local communities and strengthening economic stability. Their combination allows for a rapid response to challenges and creates an environment for maintaining social stability even in conditions of market instability.

At the heart of this relationship is the understanding that social entrepreneurship acts as an anti-crisis mechanism, combining economic activity with the resolution of social problems. It becomes a tool that helps communities adapt to external shocks, preserve jobs for vulnerable groups, and create new services and products that meet the needs of the population in times of crisis (Demchuk, 2022; Hodgson, 2023).

In conditions of geopolitical instability, social entrepreneurship contributes to reducing unemployment and social tension. According to data from the ILO (2024), involving IDPs, women, young people and people with disabilities in social enterprises helps to prevent their social isolation by providing decent working conditions and creating conditions for self-employment. Such employment is particularly important in regions where a significant part of the business is winding down due to the crisis (Obrizan, 2022).

Analytical studies (OECD, 2024) show that social enterprises use flexible forms of crisis management, such as adapting working hours, creating hybrid workplaces, and using digital tools for remote work and customer service. This allows them to maintain stability even in conditions of limited resources and disrupted supply chains (Korovkin, Makarin, 2020).

An important feature of this interconnection is that crisis management in social entrepreneurship is seen not only as a survival tactic, but as a development strategy focused on long-term socio-economic goals. Research (KSE, 2024) shows that social enterprises, by implementing anti-crisis strategies, not only maintain their operational activities, but also work to expand their markets, improve product quality, and develop partnerships with local communities and government authorities.

Innovation plays a special role in combining social entrepreneurship and crisis management. According to estimates (Hrebeshkova et al., 2025), social enterprises that use innovative management models and the latest technologies, in particular digital platforms for training, service and product sales, demonstrate higher survival rates during crises. Innovative solutions make it possible to reduce costs, increase the efficiency of internal processes and expand the consumer audience, which is critical for business sustainability in crisis conditions.

The interconnection between social entrepreneurship and crisis management is also evident in the mechanisms of interaction between business, the state, and civil society organisations. Reports (URTF, 2024; CEPR, 2025) indicate that social enterprises act as providers of social services, replacing some of the functions of the state in times of crisis, which reduces the budgetary burden and ensures that the basic needs of citizens are met. At the same time, they remain economically active entities, providing tax revenues and creating added value in the regions.

The continued development of the relationship between social entrepreneurship and crisis management demonstrates that combining these approaches creates a unique model of economic sustainability that is effective in crisis conditions. Social enterprises, applying elements of crisis management, simultaneously respond to the population's needs for social services and support economic activity, which forms the basis for the sustainable development of local communities.

One of the key elements of this model is the development of partnership networks. Social enterprises often work in cooperation with local authorities, civil society organisations and international donors, which allows them to access the resources, knowledge, technologies and financial instruments necessary to overcome crises (OECD Economic Surveys, 2025; World Bank, 2024). Such interaction contributes to the formation of joint employment programmes, the implementation of humanitarian projects and the creation of innovative services for the population.

In practical terms, anti-crisis strategies for social enterprises include:

- intensifying communication with clients and communities to identify their needs.
- transition to multi-channel sales systems, including online platforms.
- reduction of costs through the optimisation of internal processes.
- diversification of activities to reduce dependence on a single source of income.
- flexible human resource management to retain jobs.

According to data (KSE, 2024), social enterprises in Ukraine demonstrated an ability to quickly repurpose their activities during the crisis. For example, textile manufacturers switched to producing goods for humanitarian needs, and educational initiatives launched online courses to support the education of children from vulnerable groups. This allowed them to retain employees, avoid mass layoffs, and help maintain income in communities.

In addition, an important aspect of the relationship between social entrepreneurship and crisis management is ensuring access to social services and basic goods in crisis situations. Social enterprises are becoming the "first line" in meeting the needs of the population in the areas of care, education, medical services and nutrition, especially in regions

where state structures are temporarily unable to provide such services in full (URTF, 2024; CEPR, 2025). Their flexibility enables them to quickly establish local supply chains and ensure the availability of services at reasonable prices.

An innovative approach to management in social entrepreneurship is also evident in the use of digital technologies. As noted by Reuters (2024) and Wired (2023), the transition to online sales formats, the introduction of electronic payment systems, the conduct of training webinars, and the use of CRM systems for customer relationship management allow social enterprises to adapt to the constraints that arise during crises. Digital transformation increases the competitiveness of social enterprises, expands their audience, and allows them to attract young people to entrepreneurial activities.

A study (Hrebeshkova et al., 2025) notes that innovative approaches in social entrepreneurship are becoming key to its sustainability. The use of technology allows for the creation of new services, reduction of costs, and analysis of data for decision-making, which is critical for risk management in times of crisis. It also shapes a new management culture focused on the speed of response and efficient use of resources.

Thus, it can be noted that social entrepreneurship and crisis management together create a multiplier effect for the development of economic stability in the country. Social enterprises not only survive during crises, but also act as stabilisers for local economies, becoming an important pillar for communities and reducing social tension in society.

An important aspect of the relationship between social entrepreneurship and crisis management is their contribution to the development of human capital, and the formation of adaptation skills among the population. Research (Bezvershenko et al., 2025) emphasises that, in times of crisis, social enterprises become platforms for the development of new competencies among employees, particularly in the areas of digital technologies, flexible working formats, logistics, communications, and project management. These skills make employees more resilient to changes in the labour market and allow them to better adapt to new challenges.

By implementing internal training and mentoring programmes, social enterprises can recruit young people and individuals with no previous experience in certain fields, creating conditions for their professional development. Reports (OECD, 2024; CEPR, 2025) indicate that in crisis conditions, such programmes enable social enterprises to respond more quickly to changes in labour market demand, while providing employment and social support to workers.

Crisis management in social entrepreneurship also involves the use of collective decision-making models, involving employees in strategic planning and resource management. This helps to increase employee motivation, their involvement in processes, and to strengthen teamwork, which is critically important in periods of high uncertainty (Hrebeshkova et al., 2025).

At the macro level, the interconnection between social entrepreneurship and crisis management contributes to reducing the burden on state social systems. According to data (URTF, 2024), social enterprises-by employing vulnerable groups of the population-contribute to reducing unemployment and social tension, which allows the state to optimise its spending on social benefits. At the same time, tax payments, local economic development, and the creation of new services stimulate economic development at the local level, which is in line with Ukraine's regional policy objectives.

It should be noted that social enterprises within the framework of crisis management contribute to the development of social infrastructure in communities. This involves creating local social initiatives, opening employment centres for vulnerable groups, and organising training courses and support programmes for the population, which allows communities to recover more quickly after crisis events (KSE, 2024). This creates the conditions for resilient communities to form that can respond effectively to crisis situations and independently implement local initiatives.

The role of social entrepreneurship in ensuring gender equality and social inclusion during times of crisis deserves special attention. Studies (Hodgson, 2023) have shown that social enterprises often create jobs for women, provide flexible working conditions that allow them to combine professional and family responsibilities, and implement equal opportunity policies. This promotes women's economic activity even in periods of high economic uncertainty.

In the field of social inclusion, social enterprises play a catalytic role in integrating vulnerable groups into society, particularly persons with disabilities, internally displaced persons, and older persons. Employment of such categories of citizens allows them to participate in social processes, reducing their social isolation and improving their psychological state during difficult periods (ILO, 2024).

The interconnection between social entrepreneurship and crisis management is also evident in their ability to develop new business models that combine social mission with market mechanisms. In times of crisis, social enterprises change their business processes, switch to more flexible approaches to production and service provision, optimise costs, and adapt their cost structure to unstable market conditions (OECD, 2024).

A key element of this transformation is the introduction of hybrid financing models that combine income from commercial activities with grant and charitable contributions. This allows social enterprises to ensure stable financial flows and continue to implement social projects even during periods of declining income (URTF, 2024). Studies (CEPR, 2025) have shown that enterprises using such models demonstrate a higher level of adaptability to external shocks, preserve jobs, and continue to provide services to citizens.

In crisis conditions, social enterprises actively apply diversification strategies. This allows them to reduce their dependence on a single source of income, lower the risk of bankruptcy, and strengthen business model sustainability. For example, enterprises specialising in clothing production could, in crisis conditions, introduce the manufacture of essential goods or humanitarian products for the needs of communities (KSE, 2024).

Another important aspect is the use of risk monitoring and management systems in social entrepreneurship. Crisis management involves the continuous analysis of changes in the external environment, risk assessment, and the development of response scenarios. Research (Hrebeshkova et al., 2025) indicates that social enterprises use risk monitoring to make operational decisions, which allows them to avoid significant losses and quickly adapt their activities to new realities.

The interconnection between social entrepreneurship and crisis management is also evident in the formation of social capital in communities. Social enterprises engage local residents in joint activities, create support networks, and promote trust within communities. This helps to strengthen social cohesion and foster shared responsibility for the development of the local economy (Hodgson, 2023).

Government policy on supporting social entrepreneurship in times of crisis can significantly strengthen this relationship. Reports (World Bank, 2024) indicate that countries that implement programmes to support social enterprises, through tax incentives, grant programmes and training initiatives, reap the benefits of maintaining employment, developing local markets and reducing social tensions. This is particularly relevant for Ukraine, where social enterprises can play the role of partners to the state in overcoming the consequences of crises.

The successful implementation of anti-crisis strategies in social entrepreneurship also depends on the level of leadership and quality of management in such organisations. Managers of social enterprises must demonstrate flexibility in decision-making, strategic thinking, the ability to adapt quickly and communicate with stakeholders. This allows them to quickly change the focus of their activities, form new partnerships, and use the crisis as an opportunity for development (Bezvershenko et al., 2025).

It is important that the relationship between social entrepreneurship and crisis management is not limited to periods of crisis but creates conditions for the long-term development of sustainable business models. Social enterprises that integrate elements of crisis management into their activities foster a culture of innovation, flexibility and responsibility, which allows them to remain competitive in the long term (OECD Economic Surveys, 2025).

An essential aspect of the relationship between social entrepreneurship and crisis management is their impact on stimulating innovation during times of crisis. Social enterprises, while performing social functions, simultaneously introduce new technologies to improve service quality, optimise costs, and expand the availability of products and services to the population (Reuters, 2024; Wired, 2023). This allows them to respond effectively to the constraints that arise during crises and ensure business continuity.

Research (OECD, 2024) indicates that the innovative nature of social entrepreneurship is manifested in the implementation of digital tools for service delivery, the use of electronic platforms for training, the organisation of remote services, and the development of e-commerce. Such approaches allow social enterprises to expand their audience, create new channels of communication with customers, and attract additional resources for their activities.

In addition, the interconnection between social entrepreneurship and crisis management is evident in the implementation of humanitarian initiatives aimed at supporting the population in crisis conditions. Social enterprises often participate in programmes to provide food, hygiene products, and social services to vulnerable populations, helping communities survive during crises (URTF, 2024; CEPR, 2025). Such activities help build trust in enterprises, expand their social capital, and enable them to attract support from local authorities and international organisations.

The success of combining social entrepreneurship and crisis management largely depends on the availability of an institutional environment that promotes the development of social entrepreneurship. State support in the form of tax incentives, grants and educational programmes significantly increases the resilience of social enterprises in crisis conditions (World Bank, 2024). This creates conditions for the development of partnerships between the state, business and the public sector, enabling the implementation of comprehensive programmes to support the population.

Social enterprises that apply anti-crisis strategies demonstrate better survival and development indicators in crisis conditions compared to enterprises that do not integrate a social mission into their activities. This is explained by their ability to adapt flexibly to changes, respond quickly to new challenges, and work with different categories of clients, including vulnerable groups.

Social entrepreneurship combined with crisis management allows for the creation of sustainable ecosystems in communities where businesses, civil society organisations and public authorities work together to address social and economic challenges. Such ecosystems contribute to the development of local markets, job creation, support for social infrastructure, and reduction of social tensions (Hodgson, 2023).

It is particularly important that social enterprises act as local economic stabilisers during crises, ensuring the circulation of financial resources within communities. Engaging local residents in work, developing local supply chains, and

providing accessible services enable communities to adapt more quickly to the effects of crises and create a foundation for their further development (Obrizan, 2022; ILO, 2024).

The interconnection between social entrepreneurship and crisis management is also evident in the development of new approaches to strategic planning in conditions of uncertainty. Social enterprises employ flexible development strategies that allow for rapid reorientation in response to changing market conditions and social needs. This allows them not only to maintain their activities during periods of crisis, but also to use crises as an opportunity to develop new areas of work.

The development of the relationship between social entrepreneurship and crisis management contributes to the formation of an innovative economy that is focused on the needs of communities and takes social aspects into account in economic activity. Research (OECD Economic Surveys, 2025) indicates that enterprises that combine commercial activities with a social mission are quicker to adopt new technologies and practices that increase their flexibility and competitiveness in crisis conditions.

Social enterprises often use social innovation models in crisis management, which allow them to combine the provision of social services with income generation. This applies, in particular, to the provision of educational services, the organisation of childcare and elderly care centres, and the manufacture of products for community needs with the involvement of vulnerable groups in the workforce.

During times of crisis, social enterprises often become local hubs of support for the population, providing access to essential goods, social services and humanitarian aid. This allows communities to reduce their dependence on external suppliers and increases their economic autonomy. In turn, enterprises gain the opportunity to expand their range of services and strengthen their market positions.

The interconnection between social entrepreneurship and crisis management is also evident in the promotion of a culture of social responsibility among businesses. Social enterprises demonstrate how businesses can integrate social goals into their activities while maintaining financial efficiency and contributing to community development (Demchuk, 2022). This sets a positive example for other economic actors and stimulates the development of corporate social responsibility in the private sector.

It is important that the combination of social entrepreneurship and crisis management contributes to stimulating local entrepreneurship in communities, creating an environment for the development of small and medium-sized businesses. Social enterprises can act as incubators for the development of new business ideas, attract young people to entrepreneurial activities, and provide training and mentoring for beginners.

Social enterprises in the process of crisis management also contribute to the development of partnerships between different sectors of the economy, including business, government agencies and civil society organisations. Such partnerships enable the implementation of joint projects aimed at overcoming the consequences of crises, developing social infrastructure and creating jobs. Interaction between different sectors promotes the pooling of resources and knowledge, which increases the effectiveness of anti-crisis measures.

The development of human potential in communities is of particular importance in the process of combining social entrepreneurship and crisis management. Social enterprises provide opportunities for training and professional development for employees, creating conditions for improving their qualifications and adapting to changes in the labour market. This contributes to employment growth, increased incomes, and the development of economic activity in communities.

The interconnection between social entrepreneurship and crisis management also contributes to the formation of sustainable development models that combine economic, social and environmental goals. Social enterprises often implement environmentally responsible practices, including the use of resource-saving technologies, waste recycling, and the development of environmental education among the population. This allows them to combine their social mission with environmental protection, creating additional value for the community and the state.

The integration of social entrepreneurship and crisis management is key to strengthening the economic and social resilience of a country in times of crisis. By implementing crisis management strategies, social enterprises can make more effective use of available resources, respond quickly to community needs, and contribute to the development of local economies (OECD, 2024).

The impact of social entrepreneurship on the formation of social capital and trust in society deserves special attention. By performing social functions in communities, social enterprises help strengthen ties between citizens, increase mutual support, and develop local initiatives (Hodgson, 2023). This contributes to strengthening social cohesion and the willingness of communities to jointly address social and economic problems.

During times of crisis, social enterprises often take on the role of communicators between the population and government agencies, helping to identify citizens' needs and develop effective mechanisms to meet them (URTF, 2024). This role promotes the development of partnerships, increases the effectiveness of social policy implementation, and helps attract additional resources to support the population.

Social enterprises in the process of crisis management also contribute to preserving and creating jobs in communities. This is particularly relevant for vulnerable groups such as women, young people, IDPs and persons with disabilities, who often face difficulties in finding employment during crises (ILO, 2024). Employing these categories helps to reduce unemployment, increase incomes, and reduce social tensions in communities.

Research (KSE, 2024) shows that social enterprises in crisis situations demonstrate the ability to quickly adapt their activities, reorienting production towards goods and services that are most in demand in communities. This allows them not only to maintain their activities, but also to perform social functions that are important for the survival of the community.

The interconnection between social entrepreneurship and crisis management also contributes to the formation of an entrepreneurial culture in communities based on social responsibility, innovation, and a focus on the needs of society (Demchuk, 2022). Social enterprises serve as a model for other business structures, demonstrating examples of combining economic activity with social goals.

Studies (World Bank, 2024) note that social enterprises contribute to the development of the local economy by involving local resources and human capital in economic activities. They create additional demand for goods and services from local suppliers, contributing to the development of SMEs in the regions.

Social enterprises play the role of a platform for leadership development in communities in the process of crisis management. They involve active citizens in project management, event organisation, and the implementation of innovative solutions to social problems (Bezvershenko et al., 2025). This contributes to the development of management skills among citizens and increases their ability to independently solve community problems.

The interconnection between social entrepreneurship and crisis management is also evident in ensuring gender equality in employment and management. Social enterprises often provide flexible working conditions, allowing women to combine professional activities with family responsibilities, promoting their economic activity even in times of crisis (Hodgson, 2023).

In practical terms, social enterprises often act as local centres for innovation, creating new products and services that meet the current needs of the population in crisis situations (Reuters, 2024). This may include organising training courses, consulting services, and the production of socially oriented goods.

Another important area of interaction between social entrepreneurship and crisis management is the use of international experience and analytical support to implement adaptive development models. Recommendations (CEPR, 2024) are aimed at strengthening the potential of local communities by supporting entrepreneurship that combines social function with market mechanisms. The focus is on sustainable business models that are self-financing, flexible in changing environments, but at the same time focused on long-term benefits for society.

Practical cases provided (KSE, 2024) demonstrate examples of Ukrainian social enterprises that have undergone transformation in crisis conditions. These include projects that provided housing and jobs for IDPs, created micro-enterprises in sewing, food production, eco-packaging, and social service centres. They implemented anti-crisis strategies through:

- diversification of activities.
- digitisation of services.
- partnerships with donors, local authorities, NGOs.
- use of preferential loans or grants.

The adaptation tools included social franchises, business incubators for IDPs, mobile service centres, crowdfunding platforms, and micro-entrepreneurship training programmes (supported by URTF, 2024). Such solutions allow communities to develop their internal reserves, avoiding complete dependence on state aid.

Based on research (OECD Economic Surveys, 2025), social entrepreneurship acts as a buffer during crises, mitigating the effects of economic downturns through flexibility, local involvement, and the ability to quickly mobilise social capital. These enterprises:

- support income in communities.
- provide employment in niche segments.
- assist in the integration of socially vulnerable groups.
- strengthen local economic ties.
- shape behavioural models focused on trust and shared responsibility.

Successful examples of such models are not limited to Ukraine. In the Baltic States, Poland, and Georgia, social entrepreneurship has become the foundation of regional stability after periods of crisis. Programmes focused on employ-

ment, inclusion, and innovation in the service sector have reduced the burden on the budget and created new growth points in depressed regions.

In the context of Ukraine, combining social entrepreneurship with crisis management allows for the formation of a stable infrastructure that supports not only economic activity but also social well-being. This is especially important in communities that have suffered from industrial decline, migration, or military action. It is here that social enterprises can fill the gap between the market and the state, providing critical services, jobs, identity and a future.

Thus, social entrepreneurship is not only a response to the crisis, but also a strategic tool for preventing its long-term consequences (Fig. 3).

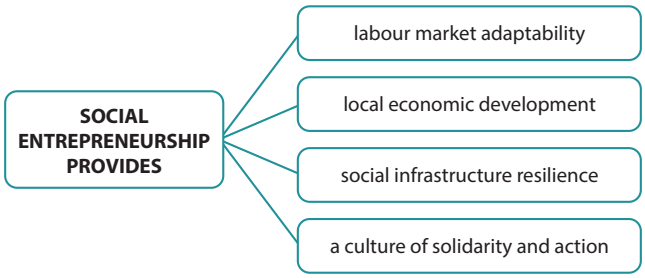


Fig. 3. The Role of Social Entrepreneurship in Times of Crisis

This potential must be integrated into national recovery policy, regional development plans, and the small business support system. The relevant regulatory framework, access to finance, and educational programmes for social entrepreneurs must become an integral part of Ukraine's current economic strategy.

In strategic terms, social entrepreneurship acts as an infrastructural element of systemic crisis management, as it can combine the functions of early response, social protection, and economic revitalisation. This potential is enhanced in the context of a multi-level crisis, when traditional public policy instruments often fail to adapt to rapidly changing realities.

Social enterprises can act as multifunctional centres that simultaneously:

- identify local community needs.
- mobilise resources and partnerships.
- create new points of economic activity.
- support target population groups.
- track the effects of the changes implemented.

This allows for the creation of an inclusive architecture for crisis management, where government agencies, businesses, civil society and local initiatives work together. Thanks to its rapid mobility, awareness of the local context and flexibility in management, social entrepreneurship complements slow and cumbersome state mechanisms — particularly in the phases of initial response, stabilisation or transition to recovery.

At the same time, in order to unlock the full potential of this interaction, a proactive government policy is needed, including:

- Regulatory support:
  - enshrining the status of social entrepreneurship in legislation.
  - creation of a special legal regime (privileges, public procurement, taxation);
  - mechanisms for verifying social impact.
- Financial instruments:
  - government and donor grants.
  - preferential loans and subsidies.
  - investment funds for social innovation.
  - creation of social banks or financing platforms.
- Institutional support:
  - development of social business incubators.
  - competence centres within communities.
  - mentoring and training programmes.

- Integration into state programmes:
  - inclusion of social entrepreneurship in recovery strategies.
  - instruments for co-financing with local budgets.
  - priority in public procurement of social services.

In the Ukrainian context, this model allows for the resolution of key issues – employment, social integration, and local economic development – with significantly less strain on the budget. In addition, it contributes to restoring trust between society and the state, which is crucial for consolidating efforts to rebuild the country.

Thus, in conjunction with the general goals of crisis management – reducing risks, ensuring stability, mobilising resources – social entrepreneurship emerges as an innovative tool not only for responding to the crisis, but also for laying the foundations for a new model of development. Its potential extends far beyond the economy, encompassing issues of social cohesion, a culture of responsible business, regional partnership and a sustainable future.

Despite its significant potential, social entrepreneurship in Ukraine faces several barriers that hinder its full integration into the crisis management system. Among them, the following are key barriers:

- insufficient regulatory and legal support, due to the lack of a separate legal status for social enterprises, leads to uncertainty regarding tax incentives, conditions for participation in state programmes, registration procedures and social impact accounting, which reduces the attractiveness of the model for new market participants.
- limited access to financial resources, as social enterprises often do not meet the requirements of banking institutions or investors due to complex profitability assessment models, and the level of microfinance and social investment in Ukraine remains low.
- low awareness among citizens and authorities, since a significant part of the population does not understand the differences between social entrepreneurship and charity or traditional business, which in turn complicates the formation of trust, the creation of partnerships, and the inclusion of such enterprises in local development programmes.
- insufficient support at the local level, because most communities do not have mechanisms to support social entrepreneurship, such as grant competitions, incubators, mentoring programmes or preferential rental terms. Accordingly, the development of such enterprises depends on the enthusiasm of individuals or external donors.

At the same time, these challenges can be turned into growth points if the state, communities and entrepreneurs themselves develop joint strategies. One promising direction is scaling up the social entrepreneurship model at the regional level. This involves:

- integrating social entrepreneurship into regional development strategies, especially in communities with high unemployment rates, a significant proportion of internally displaced persons or socially vulnerable populations.
- creation of social entrepreneurship centres within local government bodies or regional administrations to coordinate training, acceleration and access to finance.
- using public-private partnership tools to implement social services through social business.
- development of social procurement, which will enable communities to officially purchase services from social enterprises, ensuring their sustainability.

The experience of European countries shows that such approaches make it possible not only to respond effectively to social challenges, but also to stimulate the local economy. For example, Poland has created a Network of Social Economy Centres, which coordinates interaction between social enterprises, municipalities and foundations. Lithuania has a microfinance model that allows start-up capital to be obtained on preferential terms through state programmes. Georgia has introduced a voucher system for the provision of social services, which can be implemented through social enterprises.

For Ukraine, it seems expedient to combine international approaches with a consideration of local specifics: in particular, high levels of internal migration, uneven regional development, and significant pressure on the social protection system.

Therefore, incorporating social entrepreneurship into the anti-crisis management paradigm requires a systematic approach that encompasses regulatory, financial, institutional and educational mechanisms. Such an approach will not only enable us to respond to current challenges, but also lay the foundations for sustainable, equitable and inclusive development in the future.

The issue of the role transformation of social entrepreneurship in the context of Ukraine's post-crisis reconstruction deserves special attention. At this stage, social enterprises can play not only an adaptive role, but also a mobilising and

structuring function, participating in the restoration of destroyed infrastructure, the reintegration of affected communities, and the formation of new economic models.

One of the vectors of such transformation is the platformisation of initiatives. As of 2024, there are already projects in Ukraine that can be scaled up or adapted to the needs of social entrepreneurship:

- Impact Business (USAID) — creating an acceleration environment for socially oriented enterprises.
- DOBRE (Decentralisation Offering Better Results and Efficiency) — strengthening local self-government through support for economic initiatives in communities.
- "SVOI" (shelter + work + integration) — models for the employment and socialisation of IDPs through social enterprises.
- Urban Space and Veterano Group projects — examples of sustainable integration of values, business and community.

Such initiatives demonstrate that social entrepreneurship is not a marginal phenomenon but rather has the potential to become a catalyst for a new paradigm of economic development based on the principles of sustainability, solidarity and innovation.

This is particularly important in the context of seeking a new social contract after the crisis: trust in the state, corporate responsibility, citizen engagement — all of these can be linked through social entrepreneurship as a form of action that combines economic expediency with social value.

Thus, social entrepreneurship is not only a tool for overcoming the crisis, but also a point of crystallisation for a new vision of the country's future. In this sense, its potential goes far beyond local initiatives and deserves full-scale integration into state and regional development policies.

Conclusions

Based on an analysis of Ukraine's socio-economic stability in times of crisis, several key conclusions can be drawn regarding the role of social entrepreneurship and crisis management.

Firstly, social entrepreneurship in Ukraine plays an important stabilising role, combining economic interests with the resolution of social problems. It contributes to maintaining economic activity and creating jobs for vulnerable groups such as internally displaced persons, people with disabilities, women and young people. This helps to reduce unemployment and social tension, especially in regions affected by the crisis.

Secondly, social enterprises demonstrate high adaptability to crisis conditions through the implementation of innovative approaches such as digitalisation, flexible management models and diversification of activities. This allows them to respond quickly to changes in market conditions, remain competitive and ensure business continuity.

Thirdly, the interconnection between social entrepreneurship and crisis management contributes to the formation of sustainable economic models that combine social and economic goals. Social enterprises are becoming important partners of the state in the implementation of social policy, reducing the burden on the budget and ensuring the basic needs of citizens.

Fourthly, the development of social entrepreneurship contributes to strengthening social capital and trust in society. It shapes a culture of responsible business, stimulates the development of local initiatives and promotes the integration of vulnerable groups into social life.

Fifth, for social entrepreneurship to be fully integrated into the crisis management system, proactive government policy is needed, including regulatory and legal support, access to financing, development of institutional infrastructure, and educational programmes. This will not only enable a response to current challenges but also lay the foundations for sustainable and inclusive development in the future.

Overall, social entrepreneurship in Ukraine has the potential to become a key element of the recovery and development strategy, combining economic efficiency with social responsibility. Its integration into national policy can contribute to the formation of a new model of economic development based on the principles of sustainability, solidarity and innovation.

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1.3. ESTABLISHING A CRISIS MANAGEMENT SYSTEM AS A MECHANISM FOR ENHANCING ENTERPRISE COMPETITIVENESS IN UKRAINE

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Abstract. *This article investigates the crisis management system as a critical mechanism for enhancing the competitiveness of Ukrainian enterprises amid martial law, economic instability, and global challenges. The study aims to establish theoretical foundations and practical approaches for designing such a system, tailored to Ukraine's business environment. The research focuses on Ukrainian enterprises, with the subject being the organizational and economic aspects of crisis management. A systemic approach is adopted, viewing crisis management as a staged process to address enterprise crises, using methods such as analysis, synthesis, comparative analysis, statistical evaluation, expert assessments, and financial modelling.*

The study examines the operational challenges of Ukrainian enterprises, particularly small and medium-sized enterprises (SMEs), under military aggression and economic volatility. Analysis from 2023 shows micro and small businesses are highly vulnerable due to low profitability and resource constraints, while larger enterprises exhibit greater resilience. Military conflicts have intensified crises, causing infrastructure damage, logistical disruptions, and labour shortages.

The crisis management system is presented as an integrated mechanism for identifying, neutralizing, and overcoming crises. Its architecture includes influencing factors, strategic objectives, principles, resources, methods, and diagnostic tools. The system follows four stages: diagnosis of crises, strategy development, measure implementation, and effectiveness evaluation. Simplified indicators are recommended for micro and small enterprises, while medium and large enterprises benefit from in-depth analysis using value-oriented indicators and bankruptcy probability models (e.g., an author-developed logit model). Strategies should align with business scale, crisis stage, and resource availability, with measures being specific and goal oriented. Effectiveness evaluation relies on economic analysis, expert methods, and digital platforms for decision-making.

Practical measures for implementation include establishing financial reserves, cost audits, streamlined crisis plans, process digitization, enhanced communication, and KPI monitoring. Key barriers in Ukraine include limited managerial expertise, poor financial discipline, lack of preventive culture, and war-related risks.

The study concludes that an effective crisis management system serves not only as a tool for immediate crisis response but also as a strategic enabler of long-term competitiveness for Ukrainian enterprises. This system should evolve into a core managerial instrument for adaptation, innovation, and strengthening market positions in the post-crisis period.

Keywords: *Crisis Management, Ukrainian Enterprises, Competitiveness, Strategy, Diagnostics, Logit model.*

Introduction

The Ukrainian economy has undergone profound structural transformations due to ongoing military conflicts and global challenges, creating significant obstacles for enterprises. These conditions have led to an increase in crisis phenomena, which threaten the financial stability and market positions of businesses. A pivotal tool for ensuring resilience and competitiveness is the development of an effective crisis management system. Such a system is designed to mitigate risks, bolster competitive advantages, and promote the long-term sustainability of enterprises.

This study aims to establish the theoretical foundations and practical approaches for developing a crisis management system as a mechanism for enhancing the competitiveness of Ukrainian enterprises. To achieve this objective, the following tasks are addressed:

- examining the current state of businesses and the primary threats impacting Ukrainian enterprises; elucidating the theoretical principles of crisis management.
- justifying the role of crisis management in strengthening enterprise competitiveness.
- analyzing the key stages of designing and implementing a crisis management system.
- proposing practical recommendations for its adoption in Ukrainian enterprises.

The research focuses on Ukrainian enterprises as the object of study, with the subject being the organizational and economic aspects of constructing a crisis management system.

The study adopts a systemic approach, viewing the crisis management system as an integrated mechanism for enhancing enterprise competitiveness in Ukraine. To accomplish the research objectives, methods such as analysis and synthesis, systematization, abstraction, generalization, comparative analysis, empirical methods (including statistical analysis), expert evaluation, and applied financial modelling are employed. Financial modelling is used to assess enterprise sustainability, forecast bankruptcy risk (including through a custom logit model), and evaluate the potential impact of anti-crisis measures under various scenarios. The theoretical and informational foundation of the study includes works by domestic and international scholars on crisis management and competitiveness, supplemented by statistical reports and practical case studies from enterprises across various sectors.

Crisis management, particularly its role in enhancing competitiveness, has been extensively explored in academic literature. Notable contributions from international scholars include E. Altman's (1968) Z-score model for predicting bankruptcy, which laid the groundwork for assessing enterprises' crisis states. J. Argenti (1976) further developed the concept of crisis management, while P. Drucker (1999) underscored that effective crisis management is integral to securing competitive advantages in dynamic market environments. Contemporary research, such as M. Rodrigues, M. Franco, N. Sousa, and R. Silva's (2021) study "COVID-19 and the Business Management Crisis: An Empirical Study in SMEs" examines practical aspects of crisis management in small and medium-sized enterprises (SMEs) during the pandemic. Similarly, S. Durst and T. Henschel (2022), in "Crisis Management for Small and Medium-Sized Enterprises (SMEs)", highlight crisis management as a critical tool for enhancing organizational resilience amid external crises, including economic disruptions, natural disasters, and global pandemics.

Ukrainian scholars have also made substantial contributions, contextualizing crisis management within the country's unique economic landscape. O. Tereshchenko (2004) frames crisis management as a tool for financial stabilization, emphasizing Ukraine's economic volatility and proposing a model for assessing bankruptcy risks tailored to domestic enterprises. A. Marachevska (2022) explores the practical significance of crisis management for enterprises during and post-war periods in Ukraine. The intersection of competitiveness and crisis management is addressed by I. Kolodiy, A. Kolodiy, and L. Voynicha (2023), who focus on fostering competitive advantages through crisis management in agricultural enterprises. Additionally, L. Varava, A. Turylo, and S. Rtyshchev (2022) investigate crisis management in terms of optimizing enterprise potential, linking it to competitiveness and innovation in production and economic processes.

The literature review reveals that while the theoretical foundations of crisis management are well-established, most studies focus on specific facets rather than the comprehensive development of a crisis management system as a mechanism for enhancing competitiveness. Moreover, domestic research lacks sufficient practical guidance on implementing such systems in the context of Ukraine's current economic and socio-political challenges, particularly under martial law conditions.

Analysis of the Current State and Development Challenges of Ukrainian Enterprises

Enterprise development serves as a pivotal driver of economic growth and enhanced national competitiveness in the international arena. Contemporary realities, particularly globalization processes, technological transformations, and the impact of external and internal challenges, significantly influence the functioning of Ukrainian business. The full-scale war has emerged as a particularly critical factor, fundamentally altering the operational environment for enterprises. Military actions have substantially affected all economic sectors, resulting in the destruction of production capacities, disruption of supply chains, workforce reduction, and an overall decline in business activity. An analysis of Ukrainian enterprises' current state will enable the identification of key trends, strengths, and problematic aspects that contribute to the emergence of crisis phenomena in their operations.

According to data from the State Statistics Service of Ukraine (2025), the structure of Ukrainian enterprises in 2023 is characterized by a predominance of small and micro-enterprises. The total number of enterprises includes 14,000 medium-sized enterprises, 293,300 small enterprises (of which 255,000 are micro-enterprises), and only 512 large enterprises. Consequently, large enterprises represent a minimal share of the total – merely 0.17%, medium enterprises account for 4.55%, while small enterprises dominate with a 95.28% share, with micro-enterprises constituting 82.83% of the total. This trend has persisted for many years and indicates the highly fragmented nature of Ukraine's business environment, where small economic entities predominate. However, in Ukraine, large enterprises generate 34% of gross domestic product, while small and medium enterprises contribute 55%, with small businesses accounting for only 16%. This reveals a significant disproportion: large and medium enterprises, despite comprising only 4.7% of the total number, generate 73% of GDP, whereas small enterprises, despite their numerical advantage, demonstrate considerably lower economic efficiency, potentially indicating insufficient productivity and partial shadow economy activities.

By economic activity, the largest enterprises in Ukraine are traditionally concentrated in capital-intensive sectors

such as mining, manufacturing, electricity, gas and water supply, as well as agriculture, forestry, and fishing. Medium enterprises are predominantly found in industry and wholesale and retail trade, specializing in goods production, work execution (construction sector), and service provision. Small enterprises prevail in wholesale and retail trade, information and telecommunications, and professional, scientific, and technical activities.

One of the key indicators of business activity is the volume of goods and services sold (see Figure 1). The total volume of realized products by business entities in 2023 reached UAH 14,052.8 billion, representing a 22% increase compared to 2022. This growth demonstrates positive economic dynamics, despite the challenging conditions associated with martial law and economic challenges. In 2023, the largest contributions to the total volume were made by wholesale and retail trade (40.9%), industry (32.5%), and agriculture, forestry, and fishing (5.6%).

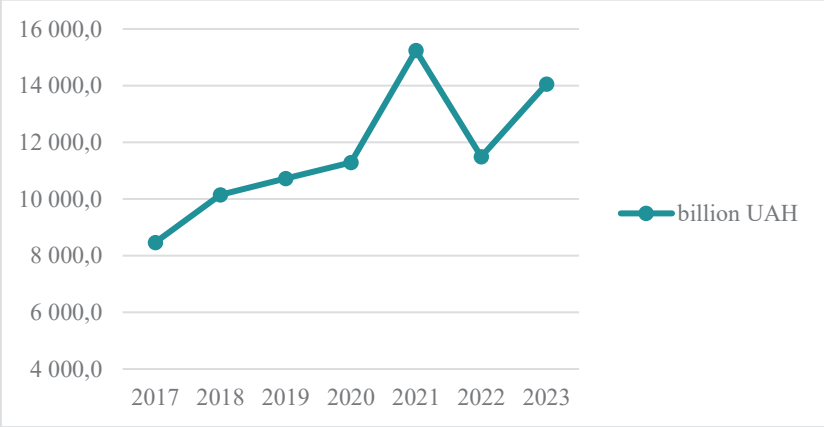


Figure 1. Volume of Products by Business Entities in Ukraine, billion UAH
Source: State Statistics Service of Ukraine, 2025

Over the period 2017-2023, the volume of realized products increased by 65.97% (from UAH 8,467.0 billion to UAH 14,052.8 billion), with an average annual growth rate of 8.85%, indicating overall positive dynamics. The highest volume was recorded in 2021, attributed to post-pandemic economic recovery, rising commodity prices (particularly in agricultural and industrial sectors), and inflationary processes. The decline in 2022 resulted from Russia's full-scale invasion of Ukraine, which led to infrastructure destruction, logistics disruption, export reduction, and decreased domestic demand. The growth in 2023 demonstrates economic activity recovery and business adaptation to wartime conditions.

Enterprise performance can be assessed using the profitability ratio, which reflects how efficiently companies utilize their resources to generate profit. From 2017 to 2023 (see Table 1), profitability levels showed considerable volatility, driven by a combination of economic, political, and external shocks. Overall, profitability in Ukraine has remained relatively low. The average profitability rate fell to -3.2%, with micro-enterprises experiencing the deepest losses at -13.8%. By 2023, profitability began to recover among large (5.9%) and medium-sized (5.7%) enterprises. Nevertheless, small (-0.7%) and micro-enterprises (-0.8%) remained unprofitable. Therefore, large enterprises demonstrate the greatest stability in Ukraine, while micro-enterprises most frequently operate at a loss and face difficulties in recovery.

Table 1. Profitability of Ukrainian Enterprises in 2017-2023 by Size, %
Source: State Statistics Service of Ukraine, 2025

Year	Average	Large Enterprises	Medium Enterprises	Small Enterprises	Of which Micro-enterprises
2017	3.0	5.2	3.1	-2.0	-8.0
2018	4.5	5.2	4.6	2.7	-1.8
2019	7.6	6.8	8.6	7.0	3.3
2020	0.9	1.0	2.1	-1.8	-5.5
2021	10.1	12.8	7.3	11.1	7.4
2022	-3.2	-3.8	-1.5	-6.2	-13.8
2023	4.5	5.9	5.7	-0.7	-0.8

In the context of the crisis caused by the war, small and micro-enterprises in Ukraine are particularly vulnerable to adverse economic trends. Their limited capacity to withstand external shocks significantly hampers their adaptability and ability to achieve stable financial outcomes. Although 2023 witnessed a slight recovery in key performance indica-

tors, persistently low profitability points to underlying structural problems. To ensure the full recovery and sustainable development of Ukrainian enterprises, it is crucial to conduct a thorough analysis of the core challenges they face.

The principal difficulties currently affecting businesses are largely driven by the consequences of the war. Since the onset of the full-scale invasion, Ukraine's economic system has been confronted with unprecedented disruptions that have impacted all sectors – from manufacturing to trade.

Firstly, active hostilities have resulted in extensive damage to infrastructure. The energy sector has proven particularly vulnerable: power plants, substations, and transmission lines have suffered massive attacks, leading to chronic electricity supply disruptions. As a result, production processes in many enterprises have either halted or become unstable. Significant destruction has also affected transportation infrastructure, including roads, bridges, railways, and ports. In particular, the blockade of Black Sea ports has effectively paralyzed maritime exports of grain and other commodities, which previously constituted a substantial share of Ukraine's foreign trade. Export-oriented industries, such as agriculture and metallurgy, have incurred the most severe losses.

Secondly, declining household incomes and overall economic instability have led to a sharp contraction in domestic consumer demand. Households have largely shifted their spending toward essential goods, significantly reducing expenditures on non-food items, services, and leisure. This trend has had a particularly negative impact on the retail, hospitality, and tourism sectors. Small and medium-sized enterprises, which are heavily dependent on the domestic market, are losing their customer base, forcing many to reduce product lines, lower prices, or cease operations altogether.

Thirdly, mass mobilization into the Armed Forces of Ukraine – estimated to involve up to one million individuals – and the migration of skilled professionals abroad (particularly in IT, healthcare, and industry) have caused a severe labour shortage. For instance, the construction sector's recovery efforts are constrained by a lack of workers. Businesses are compelled to raise wages to retain employees, which simultaneously increases operating costs and undermines competitiveness.

Fourthly, limited access to financial resources and rising interest rates have become major barriers to maintaining enterprise liquidity. War-related risks have prompted banks to tighten lending standards, with average annual interest rates on business loans ranging from 15% to 25%. SMEs frequently lack sufficient collateral or proof of stable income, substantially limiting their access to financing. Government support programmes – such as the "5-7-9%" initiative – partially alleviate this issue but are constrained in scale and encumbered by complex administrative procedures.

Regulatory constraints imposed by the government present an additional challenge. While the Ukrainian government has sought to support businesses during wartime by adjusting tax and regulatory policies, these measures are often unpredictable and insufficiently aligned with the needs of small enterprises. For example, the mandatory use of point-of-sale (POS) terminals and increased tax burdens complicate the operational environment. According to the Pulse government platform (2025), established to collect business feedback on state interaction, the most pressing issues include:

- High tax burden.
- Unpredictable actions by state and regulatory authorities.
- Administrative pressure and excessive bureaucracy in dealing with public agencies.
- Uncertainty regarding the situation in Ukraine and the domestic market.
- Blocking of tax invoices.

According to the February 2025 *Ukrainian Business During the War* survey conducted by the Institute for Economic Research and Policy Consulting, a number of critical challenges faced by enterprises under martial law were identified (see Figure 2). The most acute challenge remains the labour shortage resulting from military conscription and workforce migration – reported by 64% of respondents. The second and third most cited issues were rising prices for raw materials, supplies, and goods (56%), and security concerns related to doing business (52%). These figures have increased significantly compared to August 2024, when 46% of respondents identified these as critical issues. Other reported challenges include declining demand for goods and services (29%), disruptions in electricity, water, or heat supply (18%), logistical difficulties (13%), lack of working capital (11%), and corruption (7%). These findings underscore the intensification of both security and economic risks for businesses, as well as the growing influence of wartime conditions on enterprise operations.

The contemporary operating environment for Ukrainian businesses, shaped by the full-scale war, is characterized by multifaceted challenges that affect all dimensions of enterprise activity. These challenges have generated crisis phenomena that threaten not only individual businesses, but also the broader economic stability of the country. Accordingly, the stabilization of business operations and the enhancement of competitiveness are urgent priorities across all sectors and enterprise sizes, particularly under wartime conditions. One of the key tools for addressing these issues is crisis management, which enables businesses to adapt to dynamic environments, mitigate risks, and lay the foundation for successful long-term development.

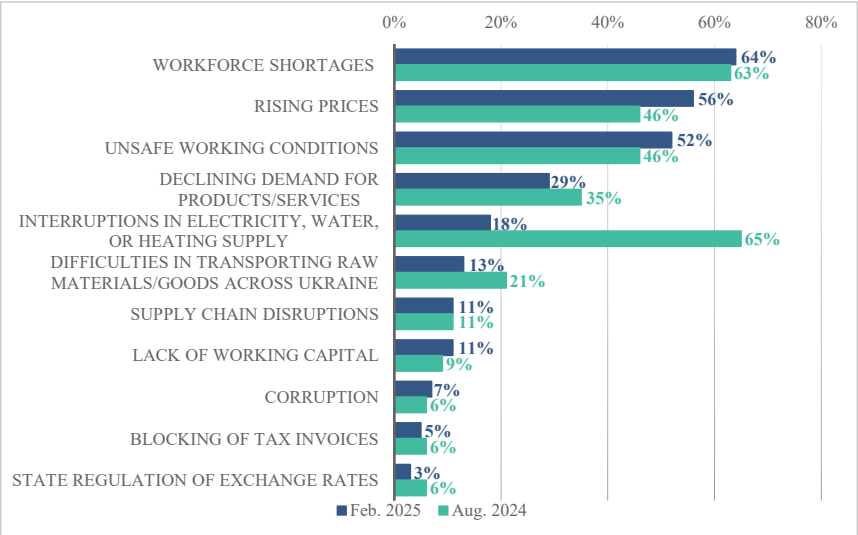


Figure 2. Key Business Challenges in Ukraine During the War

Source: Institute for Economic Research and Policy Consulting's, Ukrainian Business During the War, 2025

Theoretical Foundations of the Crisis Management System in Enterprises and its Role in Enhancing Business Competitiveness

Crisis management constitutes an integrated system of measures aimed at the timely identification, analysis, prevention, mitigation, or elimination of the negative consequences of crises affecting an enterprise. Its primary objective is to ensure the viability of the organization, maintain its stability and resilience, and facilitate effective adaptation to new operational conditions. The overarching goal of crisis management is to sustain the stable functioning of the enterprise, minimize threats, and lay the groundwork for sustainable development.

The crisis management system encompasses an interconnected set of elements, tools, and processes that enable an organization to anticipate, prevent, overcome, or minimize the impact of crises originating from both external and internal environments. It serves as a practical mechanism for implementing the enterprise's anti-crisis strategy, supporting adaptation to instability and a rapidly changing economic context.

For a deeper understanding of how the crisis management system operates, it is useful – much like in the case of a mechanism (Sharanov, 2023) – to apply the concept of its architecture. This approach allows for the structured conceptualization of all system components and their interrelationships.

The architecture of the crisis management system refers to a structural description of its key elements, their mutual connections, and the organizational processes that collectively form an effective crisis response model. It provides a holistic view of how the system functions under conditions of uncertainty and change, acting as a coordinating tool within the overall management strategy. The architecture serves as a 'map' or 'scheme' that illustrates how different components interact to achieve a common goal: overcoming crises and ensuring organizational resilience.

In comparing the concepts of 'system' and 'architecture' in the context of crisis management, it is important to distinguish that the system comprises the totality of actions, processes, and elements, whereas the architecture defines their structural organization, construction logic, and interaction. Thus, the architecture represents the intellectual model of the system, ensuring its adaptability, coherence, and effectiveness in crisis conditions.

The architecture of a crisis management system is based on three key components:

Structure – a static component that defines the distribution of functions, tasks, and responsibilities among subsystems and actors in the management process. It includes a fixed set of elements that form the framework of the system.

Behaviour – the dynamic aspect that reflects the nature of interactions among structural components and the adaptability of the system to changes.

Style – a set of principles, methodological approaches, and managerial orientations that determine the logic and rules of interaction among system components. The style influences the flexibility, responsiveness, and efficiency of decision-making.

The key elements of crisis management system architecture include influencing factors, the object and subject of management, strategic goals, principles, functions, resources, the legal and regulatory framework, managerial methods, diagnostic tools, and operational response measures (see Table 2). The complexity of the architecture arises not only from the number of elements, but also from their diverse nature, ranging from tangible resources and human capital to abstract categories such as objectives and management principles.

The primary purpose of the system's architecture is to harmonize relationships among its components, optimize managerial processes, and establish the organizational infrastructure necessary to support crisis management activities. This enables the enterprise to not only respond effectively to crises, but also to maintain sustainable development over the long-term.

Table 2. Elements of the Crisis Management System Architecture

Source: author's own development

Architectural Elements	Description
Influencing Factors	Internal: organizational structure, personnel, profit, costs, product quality, etc. External: government legislation, taxation policies, monetary and credit policies, currency fluctuations, etc.
Object	Crisis phenomena
Subject	Individuals involved in the crisis management system
Goal	To ensure a competitive market position and stable financial and economic performance of the enterprise under changing internal and external conditions.
Principles	Constant readiness, preventive action, urgency, adequacy of response, comprehensiveness, action alternatives, adaptability, prioritization of internal resources, optimal external recovery, efficiency.
Functions	Core: planning, organizing, motivating, controlling. Specific: analytical, innovative, diagnostic, forecasting, operational regulation, goal setting, accounting. Integrative: decision-making, communication, coordination.
Resources	Material, financial, human, informational.
Regulatory Framework	Internal: founding documents, organizational structure regulations. External: Laws of Ukraine.
Methods	Operational: diagnostics, monitoring, controlling. Tactical: outsourcing, benchmarking, regularization, modernization, diversification, mergers, reengineering, downsizing. Strategic: recovery, restructuring, bankruptcy.
Diagnostics	Analysis of performance indicators, bankruptcy probability models, and value-oriented metrics.
Measures	Cost optimization, marketing activities to boost sales, tax optimization, adjustments in HR policy, etc.

Thus, the architecture of the crisis management system comprises a set of interrelated elements – including subjects, objects, goals, principles, functions, methods, stages, resources, the legal framework, and influencing factors – whose synergy sets the system into motion. It forms a stable foundation for effective crisis response, ensuring the coherent interaction of elements and processes that enhance enterprise resilience.

Thanks to its clear structure, adaptability, and support for key management processes, this system not only helps overcome temporary challenges, but also lays the foundation for long-term success. These qualities facilitate a transition toward a broader role for the crisis management system – namely, improving business competitiveness. In the contemporary context of a rapidly evolving market environment, characterized by economic instability and global challenges, crisis management becomes a strategic tool that enables enterprises not only to survive, but also to strengthen their market position and outperform competitors.

The role of crisis management in enhancing enterprise competitiveness can be observed through several key dimensions:

1. Ensuring rapid adaptation to change. In dynamic market conditions, the ability of an enterprise to quickly adapt is central to competitiveness. The crisis management system provides a structured approach to identifying and responding to crises.

2. Optimizing resource potential. Crises often constrain resources, requiring their efficient allocation. Crisis management allows for cost reduction or redistribution of resources, enhancing economic efficiency and cost competitiveness.

3. Improving organizational efficiency. Crisis management contributes to internal process improvements, including enhanced coordination, leadership development, and a strengthened organizational culture.

4. Developing strategic flexibility. Through well-established crisis management processes, enterprises can make timely decisions about production shifts, entering new markets, or adjusting business models. Scenario planning, an integral part of crisis management, prepares firms for various development trajectories.

5. Strengthening customer orientation. Maintaining a loyal customer base during crises is critical. Crisis management supports this by expanding interaction channels, improving service quality, and personalizing offerings.

6. Driving innovation. Crises necessitate a re-evaluation of outdated approaches. Crisis management fosters innovation, process digitalization, and changes in marketing and sales strategies. Innovation, in turn, directly enhances competitiveness.

In conclusion, the role of the crisis management system in enhancing business competitiveness is multifaceted. It manifests through ensuring rapid adaptation, optimizing resource use, improving efficiency, fostering strategic flexibility, enhancing customer focus, and promoting innovation. These factors not only help enterprises withstand instability but also provide them with competitive advantages derived from responsiveness, cost-efficiency, innovative capability, and strong customer relationships. Thus, crisis management evolves from a reactive mechanism into a strategic instrument that supports stronger market positioning and long-term success.

Formation of an Enterprise Crisis Management System

The central role of a crisis management system in enhancing business competitiveness underscores its significance as a strategic tool for ensuring the resilience and development of enterprises in a volatile economic environment. A well-structured system architecture that harmonizes interaction between its elements lays the foundation for effective responses to crisis challenges and enables the transformation of threats into opportunities for growth. However, to realize this potential, a practical approach to the development and implementation of a crisis management system is required – one that involves the establishment of its key components, process alignment, and their integration into management practice. The transition to the actual formation of a crisis management system necessitates the development of a structured mechanism that considers the specific characteristics of the enterprise, its resources, and market conditions to ensure maximum efficiency in overcoming crises and strengthening competitive positions.

While the architecture of a crisis management system provides a structural framework and logical foundation for operational actions, the system itself represents a set of targeted actions. These actions are organized into a logical algorithm (see Figure 3), which encompasses the key stages of crisis management:

- enterprise diagnostics (considering the enterprise's size – micro, small, medium, or large);
- identification of crisis manifestations and determination of their causes.
- development of threat neutralization strategies.
- planning and implementation of anti-crisis measures.
- monitoring and control of implementation.
- evaluation of the effectiveness of implemented measures.

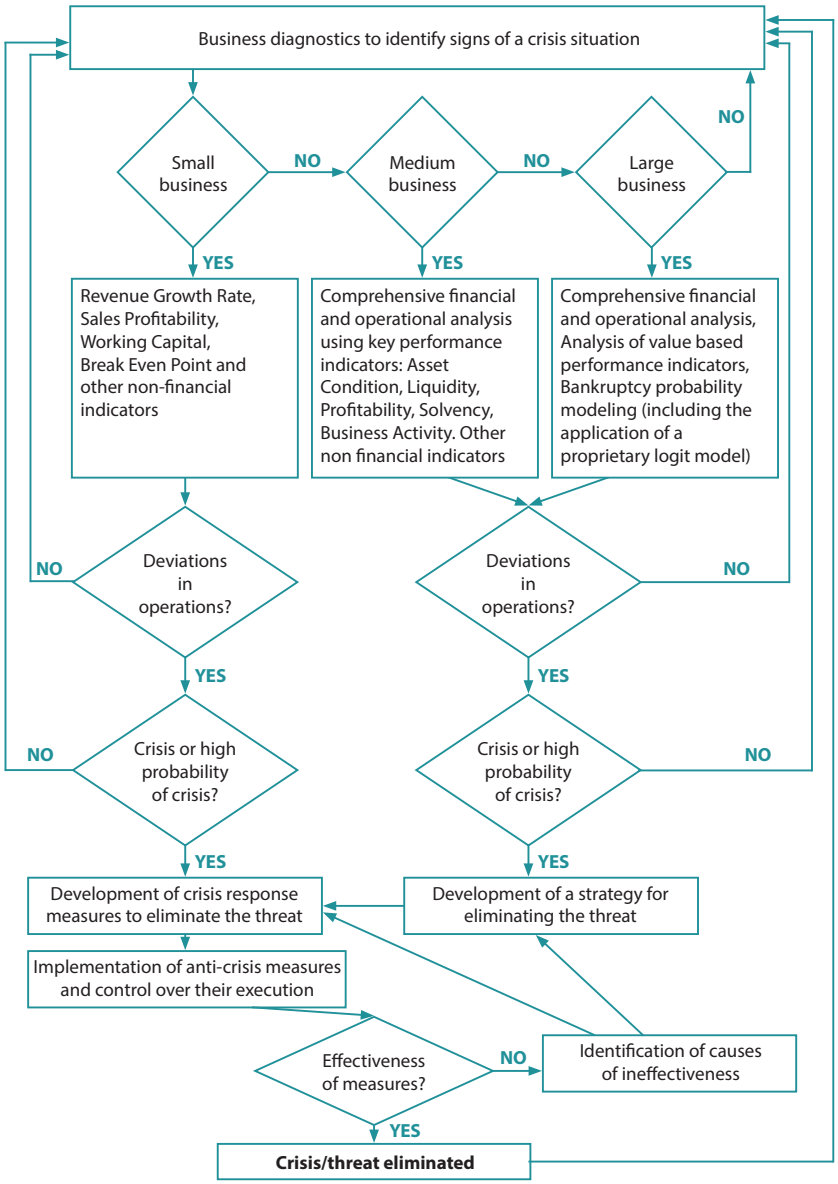


Figure 3. Algorithm of the Enterprise Crisis Management System

Source: author's own development

Depending on the scale of enterprise operations, the crisis management system exhibits specific characteristics (Sharanov & Vatchenko, 2023).

For micro and small enterprises, the focus is typically on simple, prompt decision-making. The core stages include diagnostics, identification of critical deviations, action plan development, implementation of urgent measures, and rapid assessment of outcomes.

Medium and large enterprises apply a more comprehensive approach involving in-depth analytical diagnostics, strategic planning, development of a comprehensive program of measures, implementation, performance monitoring, and multifaceted evaluation of results.

One of the most crucial initial stages of a crisis management system is the comprehensive analysis of the current situation, aimed at identifying vulnerabilities in the enterprise's operations. Effective detection of early signs of crisis and timely response require continuous monitoring and systematic diagnostics. This process may involve both external environment analysis (market conditions, competitive landscape, regulatory constraints) and internal factors (financial indicators, organizational structure, human capital), allowing for an objective assessment of risks and potential threats.

In the context of micro-businesses, which in Ukraine are typically represented by individual entrepreneurs operating individually and not maintaining formal accounting records, data availability is very limited. Thus, the primary indicators for assessing their financial and operational performance include:

- revenue growth rate.
- sales profitability.
- break-even point.

The revenue growth rate is one of the key indicators of micro-enterprise performance. It reflects the dynamics of income from goods or services over a specific period, allowing for an assessment of business development pace, sales trends, and profit growth rates. For micro-enterprises, it is especially important that this indicator exceeds one, indicating positive growth and business sustainability.

Sales profitability indicates the enterprise's ability to cover production and sales costs through earned revenue. This metric serves as an indicator of business profitability and enables objective assessment of financial stability, resource efficiency, pricing policy soundness, cost levels, and investment potential. Analyzing sales profitability helps identify causal links between costs, revenues, and business performance.

The break-even point is particularly critical for micro-enterprises and start-ups. It reflects the sales volume at which total revenue equals total costs – when the business neither makes a profit nor incurs a loss. This metric is crucial for attracting investors or creditors, as it helps assess business self-sufficiency, required sales volume for profitability, minimum viable pricing, optimal pricing policy, and the critical revenue level necessary for business stability.

Small enterprises, with up to 50 employees, typically have greater data availability for analysis. In this case, the same indicators applicable to micro-enterprises can be used, supplemented by:

- availability of own working capital (net working capital);
- current liquidity ratio.
- share of accounts receivable in current assets.

For small enterprises, ensuring an adequate volume of working capital is especially relevant, particularly in cases of delayed payments for delivered goods or services. The share of working capital in small enterprise assets can exceed 50%, and in wholesale trade it may reach up to 80%. One of the key indicators of financial stability in such cases is own working capital – the portion of current assets remaining after settling current liabilities. Growth in this indicator reflects the enterprise's increasing ability to meet short-term obligations on time.

Small enterprises often face a deficit of liquid assets readily available for circulation, resulting in low balance sheet liquidity and complicating the prompt settlement of liabilities. Hence, using quick or absolute liquidity ratios may be inappropriate, as small businesses typically cannot accumulate significant cash reserves or invest in highly liquid assets (e.g., stocks, bonds). Therefore, the current liquidity ratio is more appropriate for assessing solvency, as it measures the enterprise's ability to meet short-term obligations using all available current assets.

Another critical aspect is the analysis of accounts receivable. A high share of receivables in the asset structure may lead to a lack of working capital, increased insolvency risk, and a need for external financing, ultimately weakening financial stability, liquidity, and business activity. The write-off of uncollectible debts may even lead to bankruptcy. The most effective method to prevent overdue receivables is timely collection before due dates. This requires the ongoing monitoring of receivables, particularly by tracking their share in total current assets. Additionally, it is advisable to implement systems for managing and normalizing current assets and receivables to maintain a stable cash flow and prevent cash gaps.

Medium-sized enterprises conduct broader economic activities compared to small businesses. With increased scale comes greater complexity: intensified competition, more intricate internal business processes, and a higher demand for efficient resource, personnel, and risk management. However, medium enterprises generally maintain full accounting and analytical records, including official financial reporting, enabling comprehensive diagnostics of their financial and operational status.

To evaluate the performance of medium-sized enterprises, it is advisable to use an expanded system of financial indicators across the following areas:

- *Assessment of Asset Condition*: asset dynamics, asset turnover, asset mobility ratio, depreciation rate of fixed assets, renewal rate of fixed assets.
- *Liquidity Assessment*: net working capital, current liquidity ratio, quick liquidity ratio, absolute liquidity ratio, ratio of accounts receivable to accounts payable.
- *Solvency and Financial Stability Assessment*: equity ratio, financial dependency ratio, provision with own working capital, financial leverage ratio, manoeuvrability of equity.
- *Business Activity (Turnover) Assessment*: asset turnover ratio, accounts payable turnover ratio, average accounts payable repayment period, accounts receivable turnover ratio, average accounts receivable repayment period.
- *Profitability Assessment*: sales profitability, product profitability, operational profitability, return on assets, return on equity.

It is important to note that comprehensive evaluation should include not only the financial condition, but also other critical aspects of enterprise operations, such as business processes, organizational structure, HR management,

product assortment policy, and resource efficiency. This enables a holistic assessment of various facets of trade business performance and facilitates problem identification.

In addition to quantitative analysis methods, qualitative approaches such as PEST and SWOT analyses should also be applied. These tools allow for the evaluation of external and internal factors influencing enterprise operations and help identify opportunities, threats, strengths, and weaknesses.

To detect crisis processes in the operations of large business entities, a comprehensive diagnostic approach is required. It is advisable to combine traditional financial and economic analysis with value-based indicators and bankruptcy prediction models. This integrated approach enables the formation of a holistic view of a company's financial stability, identification of potential threats, and early response to signs of crisis.

We propose conducting the financial diagnostics of large enterprises across three key dimensions: comprehensive financial-economic analysis, analysis of value-based performance indicators and bankruptcy probability assessment using appropriate models.

The comprehensive financial and economic analysis is consistent with the methodology typically applied to medium-sized businesses. It includes an assessment of asset structure, liquidity, solvency, business activity, and profitability.

The analysis of value-based indicators involves evaluating the following metrics:

- EVA (Economic Value Added) – economic value created beyond the required return on capital.
- ΔEVA – change in EVA compared to the previous period.
- ROCE (Return on Capital Employed) – profitability of capital employed in operational activities.
- ROIC (Return on Invested Capital) – return on total invested capital.

Although value-based indicators were originally developed for shareholder-oriented companies, their application is not limited to joint-stock companies. The value creation concept, historically tied to shareholder value maximization, is universal and can be effectively applied to enterprises of various organizational forms.

These indicators assess how efficiently an enterprise utilizes its invested capital, regardless of ownership type – state, municipal, or private. The overarching idea is to create value for all stakeholders, including investors, creditors, employees, and society at large. Therefore, the use of value-based metrics is also relevant for large retail enterprises that are not publicly traded but aim to ensure long-term financial sustainability and competitiveness.

Bankruptcy prediction models are critical tools in diagnosing corporate crises, as they allow for the early detection of financial distress and the initiation of anti-crisis measures before a company reaches a critical state. These models are typically based on the analysis of financial ratios, and employ various methodological approaches, such as discriminant analysis, logistic regression, neural networks, and fuzzy logic.

However, many classical bankruptcy models – including Altman's Z-score, Springate, and Lis models – were developed using data from companies operating in the United States, Canada, and Western Europe during the 1960s–1980s. These models reflect the economic conditions of developed countries, stable institutional environments, and accounting standards that differ significantly from those in Ukraine.

As a result, applying such models within the Ukrainian business context often yields distorted or inaccurate results, as they fail to account for national business practices, ongoing economic instability, inflationary pressures, currency fluctuations, and war-related disruptions.

Therefore, it is more appropriate to use either adapted or custom-built models based on local statistical data and the realities of Ukrainian enterprises. Such models include, for example, those developed by Matviychuk (2013), which are based on fuzzy logic, neural networks, and discriminant analysis, as well as logistic regression models created using the financial statements of Ukrainian firms.

In this regard, we also propose our own logit model for assessing the probability of bankruptcy (Ivanov et al., 2023). Model (1) was developed using binary logistic regression based on data from 62 large Ukrainian enterprises (31 bankrupt and 31 solvent firms):

$$Y = -1.105 - 3.271x_1 - 2.927x_2 - 0.361x_3 + 2.366x_4 + 2.694x_5, \quad (1)$$

where:

x_1 – asset turnover ratio (revenue-to-assets).

x_2 – ratio of own working capital to total assets.

x_3 – operating profitability (operating profit/loss to revenue).

x_4 – capital structure ratio (long-term liabilities to total liabilities).

x_5 – binary indicator equal to 1 if net profit was negative for the last two periods: otherwise, 0.

The probability of bankruptcy is calculated using the logistic function formula (2):

$$P = \frac{1}{1+e^{-Y}}, \quad (2)$$

where P – probability of bankruptcy, ranging from 0 to 1.
e – base of the natural logarithm (approximately 2.71828).
Y – integrated score from Equation (1).
The interpretation of the resulting bankruptcy probabilities is presented in Table 3.

Table 3. Bankruptcy Probability Scale and Interpretive Comments
Source: author's own development

Bankruptcy Probability (P)	Interpretation
P < 0.01	Minimal bankruptcy risk
0.01 ≤ P < 0.1	Low bankruptcy risk
0.1 ≤ P < 0.3	Moderate bankruptcy risk
0.3 ≤ P < 0.5	Significant bankruptcy risk
0.5 ≤ P < 0.8	High bankruptcy risk
0.8 ≤ P < 0.9	Very high bankruptcy risk
P ≥ 0.9	The enterprise is likely in a state of default

It is essential to emphasize that detecting crisis phenomena requires more than financial analysis alone. A broad range of diagnostic tools – encompassing both quantitative and qualitative approaches – should be employed. While financial ratios, value-based metrics, and bankruptcy models provide critical insights into an enterprise's financial condition, they do not fully capture the spectrum of internal and external risks.

Integrating the results of different analytical methods allows for a deeper and more objective identification of problem areas, an understanding of interrelations among risk factors, and the formulation of balanced and informed managerial decisions. This approach significantly enhances the effectiveness of crisis management, increases adaptability to environmental changes, and contributes to the preservation or restoration of competitive advantages under conditions of uncertainty.

Given the constantly changing environment – especially under wartime conditions – enterprise diagnostics should be conducted as frequently as possible. The most effective strategy is the implementation of a continuous monitoring system. The more often diagnostics are performed, the greater the likelihood of timely problem detection and resolution. Identifying the root causes of crises enables enterprises to develop effective anti-crisis strategies.

When diagnostics reveal deviations that may lead to a crisis, the next step should be the development of an anti-crisis strategy and programme. Such a strategy represents a comprehensive set of measures aimed at overcoming crisis phenomena and strengthening the enterprise's market position.

An anti-crisis strategy is a detailed action plan designed to manage crisis situations effectively, with the primary goal of overcoming critical challenges and avoiding bankruptcy. Its key objectives include identifying and eliminating the root causes of the crisis, minimizing the impact of adverse factors, accounting for existing constraints, and restoring financial stability to ensure sustainable business operations.

The strategy's goals should focus on eliminating the underlying causes of the crisis by mitigating the influence of negative external and internal factors, while operating within the business's current limitations. The ultimate objective is to re-establish financial resilience and secure uninterrupted enterprise functioning.

- The development of an anti-crisis strategy typically follows these stages:
- Crisis Situation Analysis – assessing the causes, scale, and consequences of the crisis.
- Revisiting Mission and Objectives – adapting strategic direction to new circumstances.
- Evaluation of Alternatives – analyzing potential courses of action.
- Selection of Optimal Strategy – identifying the most effective pathway forward.

In addition to general anti-crisis measures, the management may implement complementary strategies across different functional areas, such as marketing, finance, investment, restructuring, or mergers. The final choice of strategy depends on the origin, phase, and projected consequences of the crisis. Table 4 presents possible anti-crisis strategies based on the specific stage of enterprise crisis development (Sharanov, 2021). Their diversity allows decision-makers to select the most suitable approach aligned with the enterprise's overall strategic framework.

Table 4. Anti-Crisis Strategies by Crisis Stage of the Enterprise

Source: Sharanov, R.S. (2021) 'Enterprise crisis management algorithm', Central Ukrainian Scientific Bulletin. Economic Sciences, 6(39) [online]. Available at: https://doi.org/10.32515/2663-1636.2021.6(39).288-296

Crisis Stage	Indicators	Key Strategies
Strategic Crisis	Lack or weakness of strategic management, inadequate marketing efforts, declining market capitalization or business value.	– Strategic reassessment and repositioning (re-visioning); – Business model innovation; – Digital transformation; – Marketing revitalization; – Investment in core capabilities.
Structural Crisis	Worsening financial condition, reduced development resources, loss of market share, staff downsizing, declining operational volumes.	– Supply chain optimization. – Organizational restructuring. – Business diversification. – Innovation initiatives. – Cost containment strategies.
Operational Crisis	Deteriorating economic indicators, sustained losses, operational inefficiencies, disruptions in core processes.	– Stabilization strategy. – Business process reengineering. – Risk management mechanisms. – Crisis communication strategy. – Cost minimization.
Liquidity Crisis	Escalating debt levels, deteriorating liquidity ratios, difficulties in meeting short-term obligations.	– Negotiations with creditors and suppliers. – Debt restructuring. – Access to bridge or contingent financing. – Cost-cutting measures.
Insolvency Risk (Pre-Bankruptcy)	Severe cash shortfalls, payment delays, operational breakdowns due to resource constraints, accumulation of receivables and liabilities.	– Debt obligation restructuring. – Strategic alliances or sale-and-leaseback arrangements. – Emergency survival measures. – Workforce reduction and asset downsizing.
Bankruptcy	Bankruptcy proceedings initiated, liabilities exceed assets, legal cessation of business activity.	– Reorganization (sanation). – Liquidation. – Creditor support programmes/ schemes.

To better comprehend the practical implementation of crisis management, it is essential to focus on three core types of strategies that are universally applicable across different phases of the crisis cycle: survival, stabilization, and growth strategies.

During periods of acute crisis or in the early stages of instability – particularly in contexts such as war or extreme market disruption – the survival strategy proves most effective. This approach is applied when a company is exposed to significant threats or faces the risk of insolvency. Its primary objective is to ensure business continuity and avert financial collapse. Key actions typically include cost-cutting, preservation of critical resources, and rapid adaptation to new external conditions.

The stabilization strategy becomes relevant during phases of revenue volatility or prolonged financial decline. Its aim is to restore financial equilibrium, enhance liquidity management, optimize working capital, and resume or re-build production processes. This phase is crucial for regaining internal control and setting the foundation for renewed operational efficiency.

However, an excessive focus on defensive strategies can undermine a company's competitiveness. For instance, aggressive cost-cutting often entails staff downsizing and wage freezes, which may erode employee morale. Similarly, reductions in service quality, output, or a lack of innovation can weaken a company's market position. Therefore, it is vital to transition from survival-oriented measures to growth strategies in a timely manner.

Under crisis conditions, growth strategies offer the most promising path forward. These strategies focus on business expansion and include concentration, integration, and diversification approaches. Growth is not only a way to preserve the business, but also an opportunity to strengthen its market standing over the long term. Strategic objectives at this stage may involve scaling production, expanding product lines, entering new markets, and exploring new areas of activity.

The principal tool for implementing any crisis management strategy is the anti-crisis programme. This is an official document that outlines a comprehensive set of actions aimed at overcoming the enterprise's crisis. Within a single strategic framework, multiple anti-crisis programmes may be developed, each tailored to address specific objectives through a structured set of interventions.

An anti-crisis programme can be broad (organization-wide) or segmented into sub-programmes aligned with specific departments or functional units. Its structure typically includes the following components (Cherniavskyi, 2006):

- A detailed list of planned measures.
- Implementation timelines (start and end dates).
- Required resources.
- Anticipated outcomes.
- Responsible individuals and executors.

Financing of such programmes is most often sourced from internal capital or enterprise reserves. When internal resources are insufficient, external investors may be attracted through the implementation of a rehabilitation investment project aimed at avoiding bankruptcy. In such cases, external administrators may be brought in to lead the stabilization and recovery process.

Anti-crisis measures represent targeted actions designed to address and overcome crisis situations. These measures are formulated as specific tasks and objectives that must align with the overarching goals of the selected crisis management strategy.

Table 5 outlines key anti-crisis measures associated with the three fundamental crisis management strategies: survival, stabilization, and growth. The proposed measures can be adapted to the specific context of an enterprise, taking into account its sector, operational scale, and the nature and severity of the crisis.

Table 5. Anti-Crisis Measures within the Framework of Enterprise Crisis Management Strategies

Source: author's own development

Strategy	Description	Key Anti-Crisis Measures
1. Survival Strategy	Implemented under conditions of deep crisis, significant threats, or bankruptcy risk. The primary objective is to preserve the company's core functions and avoid financial collapse.	– Downsizing and cost-cutting. – Temporary suspension of salary payments; – Discontinuation of unprofitable products or projects; – Disposal or leasing of non-core assets; – Investment freeze; – Deferred payments to suppliers; – Daily financial control implementation; – Reduction of marketing expenditures.
2. Stabilization Strategy	Applied after the acute phase of the crisis has been overcome, with the aim of regaining financial control and ensuring operational stability.	– Debt restructuring; – Optimization of costs and internal processes; – Recovery of working capital; – Product portfolio revision; – Reorientation towards stable markets; – Introduction of lean management practices; – Outsourcing of non-core activities; – Enhancement of financial monitoring systems.
3. Growth Strategy	Implemented after stabilization to achieve long-term development and enhance competitiveness. The goal is to consolidate market positions and enter new markets.	– Diversification of product lines and business areas; – Entry into new markets; – Investment in innovation and process automation; – Expansion of the sales and distribution network; – Workforce upskilling and retraining; – Engagement of strategic investors; – Development of partnerships and strategic alliances; – Intensification of marketing activities; – Implementation of CRM and ERP systems.

The effectiveness of crisis management in an enterprise lies in its ability to achieve maximum results from implemented measures while minimizing resource use and preserving the company's core competitive advantages.

The evaluation of crisis response effectiveness typically relies on the following criteria:

- Improvement in key performance and financial indicators – this involves analyzing the dynamics of primary business metrics before and after implementing crisis management measures.
- Speed of achieving results – assesses how promptly the enterprise has attained positive outcomes following the implementation of remedial actions.

- Economic feasibility of outcomes – evaluates the ratio between the costs incurred in executing anti-crisis actions and the improvements achieved.
- Sufficiency of change for restoring viability – involves comparing actual results with planned or benchmark values to assess whether the enterprise can be considered stabilized.

The effectiveness of crisis management actions may be assessed using the following methods:

- **Economic analysis** – a comprehensive examination of financial and economic indicators before and after the implementation of measures, enabling assessment of changes in efficiency, profitability, and liquidity.
- **Expert evaluation** – involves expert judgment from industry professionals regarding the rationale, feasibility, and results of the actions taken.
- **Comparative analysis** – involves comparing crisis-period indicators with post-intervention figures to evaluate the impact of crisis response measures.

If implemented measures prove ineffective – if the crisis worsens or outcomes fall short of expectations – the enterprise should return to the diagnostic stage, reassess the underlying causes, and develop a revised anti-crisis strategy.

Thus, crisis management represents a comprehensive and phased system of actions encompassing diagnostics, application of tailored strategies, implementation of specific measures, and performance assessment (see Fig. 3). Each stage is interrelated and directed toward stabilizing operations, minimizing losses, and restoring enterprise viability amid crisis conditions.

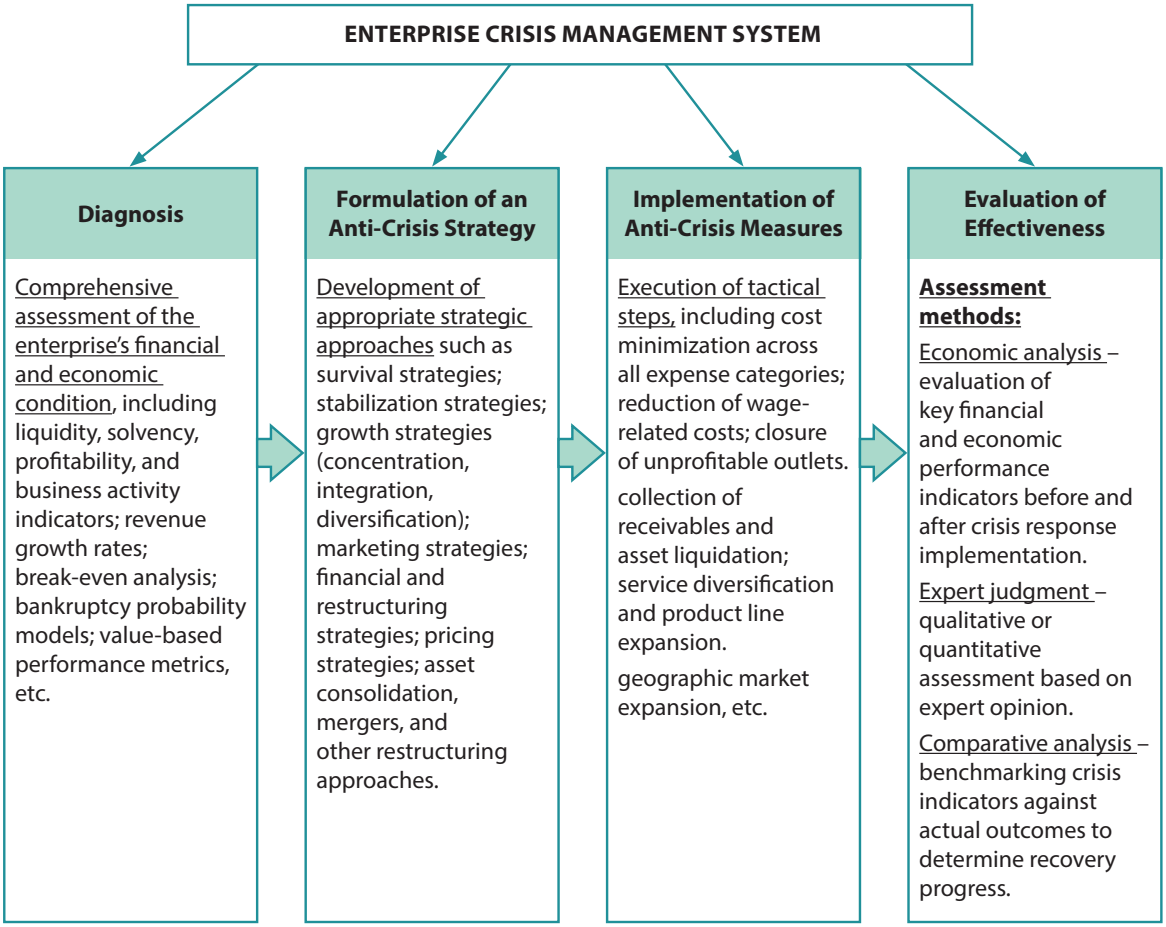


Figure 3. Enterprise Crisis Management System
Source: author's own development

The overall crisis management system serves as an integrated mechanism for diagnosis, planning, decision-making, and implementation of measures aimed at mitigating the adverse effects of crises, preserving viability, stabilizing operations, and regaining competitiveness. Its development requires clear functional structuring, coordination of managerial efforts, and the formulation of flexible strategic and tactical decisions within a unified developmental concept.

In Ukraine, especially among small and medium-sized enterprises, crisis management systems are often underdeveloped or ineffective due to several reasons. Firstly, many enterprises lack systematic financial planning and control. The absence of reserve funds, irregular analysis of financial indicators, and weak accounts receivable management result in limited

resources for rapid crisis response. Secondly, a significant number of Ukrainian managers lack adequate knowledge and experience in crisis management. Insufficient strategic planning, risk analysis, and change management hinder the design and implementation of effective responses. Thirdly, crisis management is often perceived reactively – as a response to crises rather than a preventive tool. A weak risk forecasting culture makes enterprises particularly vulnerable to external shocks.

Given the structural and contextual challenges facing Ukrainian enterprises – particularly SMEs – the following practical, resource-efficient measures are recommended to establish foundational crisis management capabilities:

- Conduct financial and economic diagnostics – the timely identification of financial issues is vital. Regular monitoring (weekly, if possible) of at least two to three core performance indicators – such as sales volume, liquidity, or cash balances – can help detect critical deviations early and prompt preventive measures.
- Develop a basic anti-crisis action plan – draft a written response algorithm for various crisis scenarios (e.g., demand reduction, supply disruptions, cost increases). The plan should include:
  - a clear list of potential risks.
  - specific countermeasures (e.g., cost-cutting, asset conservation).
  - designated responsible persons for implementing each action block.
- Create a financial reserve – to increase resilience to unforeseen challenges, establish a stabilization fund. Reserve 5 – 10% of net profit monthly in a separate account for emergency needs.
- Perform a basic cost audit – review expenses from the last three months and identify non-essential expenditures that can be eliminated without harming business operations.
- Improve internal communication – keep employees regularly informed about business status and involve them in solution generation.
- Strengthen communication with external stakeholders – maintain transparent and consistent communication with customers and partners, including timely updates about service or delivery changes and active presence on digital platforms (e.g., websites, social media, messaging apps).
- Leverage free or low-cost digital tools for efficiency gains – improve management efficiency using cost-effective or free software, such as Google Sheets for financial tracking, Trello for task management, and Canva for marketing design. These tools help automate business processes without straining the budget.
- Monitor and control KPIs – establish clear key performance indicators (KPIs) to assess the effectiveness of implemented measures (e.g., 10% cost reduction, 5% increase in sales). Feedback from employees, clients, and partners should be integrated to refine strategy. The use of business intelligence (BI) tools like Power BI or Tableau is recommended for data visualization and decision-making support.

These recommendations serve as a foundational framework adaptable to enterprises of all sizes, particularly SMEs. They can contribute to business stabilization and foster the development of a comprehensive crisis management system – an increasingly critical element for enterprise resilience and recovery in today's uncertain environment.

Conclusions

The current economic and socio-political conditions in Ukraine – driven by ongoing military conflict, global challenges, and domestic instability – create a complex and unpredictable environment for business operations. This study confirms that Ukrainian small and micro enterprises are especially vulnerable to crises due to low profitability, limited access to finance, skilled labour shortages, and high dependence on domestic demand. The full-scale war has introduced a new wave of threats, including infrastructure destruction, supply chain disruptions, and rising operational costs. In contrast, medium and large enterprises exhibit greater resilience, holding a significant share of GDP and ensuring strategic economic stability.

In such a context, the implementation of crisis management systems becomes critically important for business survival and enhanced competitiveness. Crisis management is viewed as a holistic system that encompasses diagnostics, strategic planning, implementation of measures, and performance evaluation. Its structure consists of interconnected components: management actors and objects, strategic goals, principles, functions, tools, legal and regulatory frameworks, as well as diagnostic and operational interventions. The integrative nature of this system enables enterprises to adapt to changing conditions, mitigate risks, and sustain operational effectiveness.

The proposed algorithm includes five sequential stages: diagnosis, identification of crisis symptoms, development of strategies, implementation of measures, and evaluation of results. For micro and small enterprises, simplified metrics such as revenue growth rate, sales profitability, and break-even point are recommended. For medium and large enterprises, a more detailed analysis should be applied using value-based indicators and adapted national models for bankruptcy risk assessment (e.g., author's custom logit model).

Crisis strategy selection should be based on business scale, crisis stage, and resource availability. Applied measures must be concrete, structured, and logically aligned with strategic objectives. Effective practices include cost optimization, mobilization of internal reserves, digitalization of operations, enhanced stakeholder communication, and adaptation to market shifts. The evaluation of measures should rely on KPI systems supported by economic analysis, expert evaluation, and modern digital platforms for data visualization and decision justification.

Despite its strategic importance, crisis management in Ukrainian enterprises is often hindered by financial mismanagement, low managerial competencies, weak preventive culture, and restricted access to financing amid wartime conditions. Overcoming these barriers requires adopting basic management practices, including reserve fund creation, regular cost auditing, simple crisis planning, use of free digital tools, improved internal and external communication, and systematic KPI monitoring.

In conclusion, implementing a robust crisis management system is essential for enhancing the adaptability, financial stability, and sustainable growth of Ukrainian enterprises amid multi-dimensional crises. In the long run, such systems should evolve from reactive mechanisms into strategic management tools capable of mitigating external threats and generating long-term competitive advantages.

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1.4 KEY ISSUES IN IMPROVING THE COMPETITIVENESS OF INDUSTRIAL ENTERPRISES IN CONTEMPORARY CONDITIONS

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Abstract. *The article deals with topical issues of green industry development as a key factor in improving the competitiveness of industrial enterprises of the Republic of Tajikistan. The author analyzes the current trends in the introduction of environmentally friendly technologies, energy efficiency and sustainable production, which contribute not only to reducing the negative impact on the environment, but also to strengthening the market position of industrial enterprises. Special attention is paid to the economic and managerial aspects of transition to "green" industry, including state support, investment in innovation and formation of environmental responsibility of enterprises. Recommendations for the integration of sustainable development principles into the strategy of industrial enterprises are offered. The article also considers the key aspects of green transition as a strategic tool to improve the competitiveness of industrial enterprises analyzed modern environmental initiatives, such as the introduction of energy-efficient technologies, the use of renewable energy sources, reducing the negative impact on the external environment and the transition to a circular economy. Special attention is paid to the impact of environmental measures on the economic efficiency of enterprises, their image in the national and international arena.*

The essence of the obtained results is that at the current stage of development, taking into account the actualisation of climate change issues, the factor of 'green' energy should be used to form an investment image of the country and attract transnational corporations. The scientific significance of the obtained results lies in the development of proposals for the use of 'green' energy in improving the competitiveness of the national economy of the Republic of Tajikistan. The article is also devoted to the study of the role and significance of the transition to the circular economy in the formation of competitive advantages and increasing the competitiveness of industry. The article proves the effectiveness of the formation of circular economy business models at industrial enterprises and substantiates the necessity of transition to the circular economy in conditions of resource constraints. According to the results of the study, the necessity of transition to the circular economy - as the main factor in the formation of competitiveness of industrial enterprises - is emphasized.

Based on the results of the study, measures aimed at the formation of "green" industry, as well as achieving sustainable development and strengthening competitive advantages in the conditions of accelerated industrialization of the economy of the Republic of Tajikistan are proposed.

Keywords: *competitiveness, industrial enterprises, green transition, energy efficiency, environmental standards, innovative technologies, circular economy, competitive advantage.*

Introduction

The world economy is in transition from a resource-based economy to a knowledge-based economy, where the transition to a "green" economy and the actualization of environmental initiatives are key areas of focus. The need for quality implementation of the Sustainable Development Goals, the aggravation of climate change, as well as the pandemic and geographical expansion of military conflicts pose new challenges for nation states and the entire humanity. In this context, the transition to a low-carbon economy and the achievement of decarbonization goals give new importance to green transition and environmental initiatives. The spectrum of the above-mentioned areas and issues has a huge impact on shaping and enhancing the competitiveness of industrial enterprises.

The Strategy for the development of green economy in the Republic of Tajikistan for 2023-2037 defines the directions of "green" transition in our country. One of the objectives of this strategy is to increase the competitiveness of the national economy based on the development of "green" economy (17). The Strategy recognizes the introduction of green economy in the industrialization of the country as one of the main directions for the formation of competitive industry. To reduce the negative impact on the environment "green" transition allows to create conditions for transition to circular economy and formation of a new production mode.

"Green" transition and environmental initiatives in increasing the competitiveness of industrial enterprises

In the conditions of globalization and active participation of the Republic of Tajikistan in regional and international integration processes, the main factor in improving the competitiveness of national industry is the active introduction of "green" technologies and implementation of environmental initiatives. On this basis, the transition to "green" industry, based on the formation of "green" productive employment, modernization of production considering modern environmental requirements, development of innovation activities, as well as the creation of waste-free production through the expansion of initiatives in the direction of their clustering, is of particular relevance.

According to the authors of the study "green" transition and the formation of "green" management in industrial production will allow to preserve and improve the competitiveness of the enterprise. Justifying the necessity and strategic relevance of introducing the ESG concept, the authors note that it allows increasing the competitiveness of products and acts as a key tool for "green" strategic planning.

For the "green" transition and increasing its importance in ensuring the competitiveness of industrial enterprises it is necessary to improve the institutional framework, to create the concept of environmentally friendly production, to comply with environmental norms and requirements in the creation of industrial production. Special attention should also be paid to the issues of clustering, creation of waste-free production, as well as the development of infrastructure of the "green" economy. Implementation of the above measures allows increasing the competitiveness of industrial enterprises of the Republic of Tajikistan.

In the context of the "green" transition, energy efficiency is one of the key factors influencing the competitiveness of industrial enterprises. The National Development Strategy of the Republic of Tajikistan for the period up to 2030 attaches special importance to the issues of energy efficiency. The need to improve energy efficiency in the real sector of the economy occupies an important place in the system of measures for the development of industry in the Republic of Tajikistan. Improvement of energy efficiency and use of energy-saving technologies are recognized as the main prerequisites for technological modernization, activation of innovation activity and growth of competitiveness of industrial producers.

It is well known that one of the key areas for increasing competitiveness of industrial enterprises is cost reduction, as concentration of efforts in energy efficiency allows to reduce energy costs and thus ensure cost leadership. This is since energy costs account for the lion's share in the cost structure of industrial products. Reducing energy costs will lead to lower prices, which is the main indicator in determining the competitiveness of industrial products in the domestic market.

The formation of high energy efficiency is a basis for reducing the sensitivity of production to fluctuations in energy prices and, accordingly, a platform for increasing the competitiveness of industrial products. The practice of industrialized countries of the world shows that competitiveness is achieved based on an advantage in energy efficiency. For example, there is competition among EU countries in achieving high energy efficiency parameters (Isachenko T. M. p. 35), for which in recent years huge investment resources are used, and a policy of technological re-equipment is carried out.

The analysis shows that today the highest energy consumption is in the metallurgical, petrochemical and paper industries. The latter two are not developed in Tajikistan, and metallurgy is one of the main consumers of electricity. In this case, the "green" transition can significantly change the energy saving policy and create conditions for increasing the competitiveness of industrial enterprises.

To improve the competitiveness of industrial enterprises in the Republic of Tajikistan, along with the expansion of the use of green technologies and the implementation of relevant environmental initiatives, the general conditions for competitiveness growth are also important. They mainly include tax policy, investment and innovation activities, scientific research and digital technologies, as well as the development of innovative entrepreneurship, not less important is the system of personnel training, qualified labor force and retraining and advanced training of human resources potential of the enterprise [Malikova R. E., p. 163].

Our analysis of the activities of several industrial enterprises, which were put into operation or modernized after the start of implementation of the priority in the field of accelerated industrialization, has shown that the "green" transition is embedded in the concepts of their functioning and development. But to date, the level of maturity of these industrial enterprises, the lack of "green" standards in the direction of regulation of industrial production, as well as insufficient financial, investment and technological capabilities do not allow the creation of "green" production.

That is, modern industrial enterprises of the Republic of Tajikistan do not have the necessary resources for the implementation of "green" initiatives. In this case, the issues of formation of the system of state support for the "green" transition are of great importance. For this purpose, it is necessary to improve the legal framework, as well as to develop incentive mechanisms and tools to encourage the transition to "green" industry.

Based on the analysis of the literature, as well as the practical experience of industrial enterprises in industrialized countries of the world, we can form the following system of indicators that show the level of maturity of enterprises in the direction of transition to a "green" economy (Fig. 1.4.1.).

As can be seen from the figure "green" transition is the basis for the formation of competitive advantage. To date, there are no empirical studies that show the relationship between green transition and the competitiveness of industrial enterprises. But it is an undeniable fact that the demand for green products is increasing, and green transition is a powerful factor in attracting investment and reducing production costs, especially in the direction of energy efficiency. In this regard, if modern industrial enterprises of the Republic of Tajikistan will develop a roadmap for "green" transition and start to implement environmental initiatives - it will have a positive impact on the climate and environment. In this context, green transition creates conditions for increasing the competitiveness of industrial enterprises.

Currently, the transition to a green economy and the activation of green transition trends acts as a parameter of competitiveness. Despite the relevance and indisputability of this statement, there are not many serious studies proving this postulate. But the development and implementation of environmental initiatives, introduction of system requirements of the "green" economy into industrial business models, as well as optimization of resource use and reduction of negative impact on the external environment can become the basis for improving the competitiveness of an industrial enterprise. The listed factors have not only a quantitative impact on improving the competitiveness of an industrial enterprise, but also a qualitative impact, as they form a new concept of functioning, which has a positive impact on the image, reputation, brand and market position of the enterprise. The latter, in turn, play a determining role in the formation of sustainable competitive advantage of enterprises.

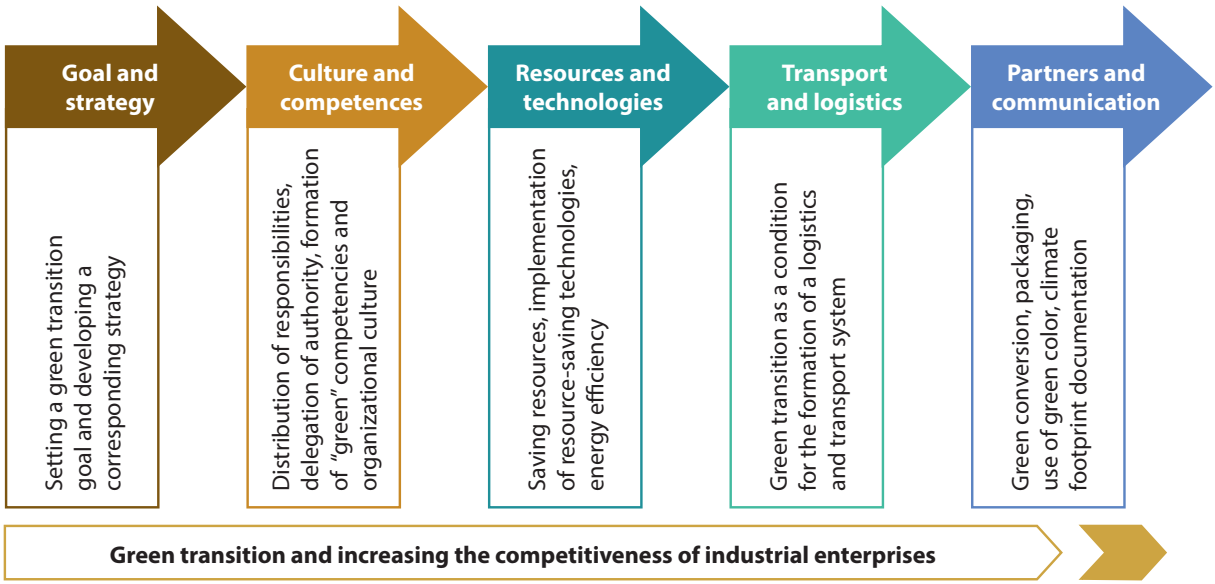


Fig. 1.4.1. Indicators of the "green" transition and the formation of "green" industry
Source: developed by the author

In the conditions of the Republic of Tajikistan these directions are not yet so developed and not tested in practice. In this regard, "green" transition in industry and transfer of industrial production to "green" standards requires a comprehensive approach. Important in this direction is the choice of business model, stage of production and place in the supply chain, where "green" standards can be used. In addition, the implementation of green standards also involves research on the needs of potential audiences, institutional behaviors and regulations, technological components, and incentive measures [Boboev F. D., N. Sh. Abdurakhmanova, p. 383].

Environmental initiatives in the context of green transition allow creating an effective system of renewable energy implementation, resource management, waste reduction, transition to lean production, application of biodegradable packaging, certification according to advanced global standards, as well as the formation of a green profile of an industrial enterprise. It should be noted that the "green" transition requires huge resources, which emphasizes the need to subsidize 'green' initiatives and technologies, improve the regulatory framework, as well as the widespread introduction of public-private partnership mechanisms in the implementation of environmental initiatives and the transition to a "green" economy.

One of the key conditions for the green transition is the large-scale introduction of green technologies. "Green" technologies as a tool of the "green" economy are primarily designed to create an ecosystem for improving energy efficiency and resource conservation. These areas focus on the rational use of resources in industrial production, especially in terms of reducing energy consumption, reducing emissions of greenhouse gases and harmful substances that can lead to savings from reduced consumption, increasing carbon investments and preventing environmental damage and disaster. To date, in the context of strengthening the role and importance of the green transition, the potential for

transition to a green economy is being actively built in all countries of the world. Green growth, green energy, biofuels and biotechnologies are being actively discussed.

The success of the "green" transition and the formation of a "green" industry allow increasing the competitiveness of industrial enterprises mainly through the creation of eco-competitive advantages. To date, building export potential and implementation of import-substitution strategy in the industry of the Republic of Tajikistan requires the creation of competitive industries. But for this purpose, it is necessary to define the conceptual framework and develop a system of measures to accelerate the "green" transition in industry as the basis for the formation of a "green" economy in the Republic of Tajikistan.

In our opinion, for successful "green" transition in industry it is necessary to develop a new concept of economic system in the national industry. In this system, a special place should belong to the orientation to the "green" economy, intellectualization of industrial production, introduction of 'green' standards, as well as the formation of competitive "green" industry. It is also important to apply mechanisms of public-private production in the development and implementation of environmental initiatives in industry. At the same time, the development of green industrial policy, institutional transformation, resource provision, development of necessary infrastructure, green start-ups, public-private partnership projects, as well as personnel and information support of green transition processes are also relevant.

The formation of green industry as a determinant of sustainable competitive advantage of the national economy also depends on the "greening" of human capital development. In this direction, green culture, green worldview, green behavior, green skills and green thinking become important. These inherent characteristics of human capital play a fundamental role in an active green transition and the formation of a green industry. This is also because these characteristics are the basis for the creation of green jobs. In addition, human capital with such qualities facilitates green restructuring, the creation of new jobs and relevant professions, as well as green technology and innovation. All this requires the transition to a new model of education, as well as the creation of conditions for improving the efficiency and effectiveness of engineering and technical personnel training and vocational education system [Pavlova, M. P., p. 110].

Thus, improving the competitiveness of the national industry and transition to a "green" economy as the main directions of economic development of the Republic of Tajikistan in the medium and long term require a comprehensive approach. Effective and competent implementation of the Strategy for the development of green economy in the Republic of Tajikistan for 2023-2037 and successful "green" transition create conditions for the formation of sustainable competitive advantage. For this purpose, in our opinion, it is also important to apply market mechanisms that will accelerate the "green" transition and increase the competitiveness of industrial enterprises. In this context, it is relevant to apply the ESG concept, which, as a holistic model, allows for "green" strategic planning and prompt adaptation to the principles of sustainable development.

Strategic development priorities of the Republic of Tajikistan are aimed at achieving sustainable rates of socio-economic development. Under the conditions of the priority of accelerated industrialization of the economy, the fundamental issues of increasing the competitiveness of the national industry are the transition of industries to environmentally friendly technologies and circular production, as well as the implementation of the concept of closed-cycle economy. In this context, the "green" and digital transition as a factor of increasing the competitiveness of industrial production based on the application of new technologies and innovations is also important. For this purpose, the state needs to create conditions for the introduction of effective solutions, financing research and innovation, as well as commercialization of the results of research and development activities. "Green" transition also requires stimulating investment activities towards high-quality waste recycling.

Thus, we can conclude that from the theoretical and methodological points of view, the competitiveness of industrial enterprises depends on many factors, among which "green" technologies occupy an important place. Along with this, it is also necessary to consider such factors as labor market flexibility, availability of skilled labor, knowledge, agglomeration effects, and trust in institutions. In the context of the transition to a green economy, the energy and resource aspects of improving the competitiveness of industrial enterprises, which include parameters such as price, quality of infrastructure and R&D, are also important.

The Strategy for the development of green economy in the Republic of Tajikistan for 2023-2037 identifies several directions and expected results of the transition to a "green" growth model. In addition, in the Address of the President of the Republic of Tajikistan to Majlisi Oli of the Republic of Tajikistan it was noted that the Republic of Tajikistan in 2027 will become a "green" country. In this regard, the "green" transition is recognized as a fundamental platform for the implementation of national development priorities, as well as other directions of socio-economic and cultural-political development. These needs are conditioned by the threats arising in the context of climate change and the importance of environmental management. At the same time, the challenges of resource efficiency and chemical and household waste management also emphasize the need for a green transition in industry.

Implementation of priorities in the field of green transition and environmental initiatives requires the formation of a new ecosystem, where the key indicators are green investments, green investment projects, fiscal reforms due to green transition, green tax, green jobs, green benefits, green procurement, as well as the development of a green educational and cultural platform. The development and implementation of activities aimed at expanding the green transition policy allows creating conditions to produce "green" competitive products, increasing export potential, building a "green" image at the regional and global levels, as well as achieving social well-being and environmental protection.

It should be noted that the implementation of the green economy concept requires time and huge resources. These resources are especially relevant in the context of decarbonization of industrial production and transition to "green" production standards. This circumstance requires a systematic approach on both the state, private business and the public in general. In industry, given the current trends in the development of global industrial production and the characteristic trends in the formation of modern industrial complexes, the "green" transition and the implementation of environmental initiatives act as a basis for ensuring competitive development. Clustering is an important and effective tool for the implementation of priorities in the field of "green" transition and "green" investment projects in industry. Creation of territorial-production clusters, which are recognized in the National Development Strategy of the Republic of Tajikistan for the period up to 2030 as a key direction for the development of the country's regions and increasing their competitiveness, allows creating a platform for the formation of a closed cycle economy, activation of innovation activity and acceleration of the "green" transition.

Improving the competitiveness of domestic products is among the priority tasks of the current stage of development of the Republic of Tajikistan. This task is also outlined in various strategic documents, especially in the programs for the development of industries. The solution of this task depends on the creation of necessary conditions both at the national and regional levels of management. Attention in this aspect should be paid to the formation of an ecosystem of "green" transition in industry, activation of innovation activity and development of necessary skills for industrial transition. This concept can be schematically represented as follows (Fig. 1.4.2).

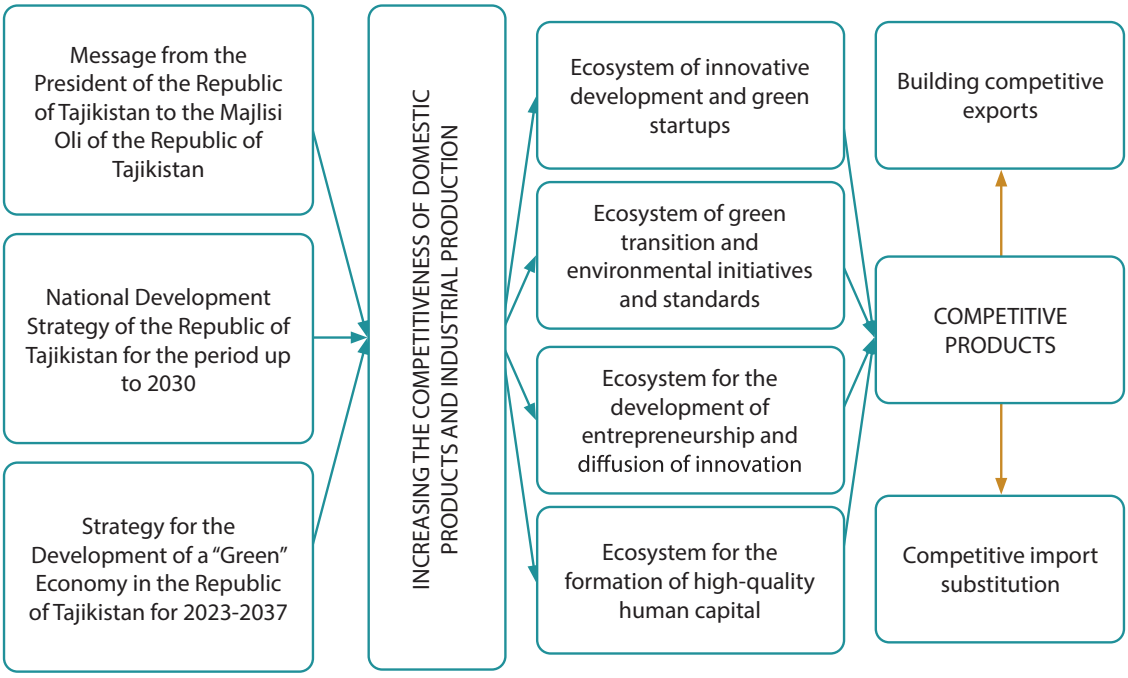


Fig. 1.4.2. System for ensuring the competitiveness of industrial products in the context of the "green" transition

Source: developed by the author

Thus, "green" transition in industry requires not only institutional support, but also an appropriate ecosystem. In the conditions of the Republic of Tajikistan, it is important to create an ecosystem for waste management, reuse and recycling, necessary for collection and sorting of industrial and household waste. Also, at "green" transition one of the potential obstacles is the lack of ecosystem for training of personnel of necessary qualification. This is since green transition as a completely new concept of organization and management of industrial production implies the availability of qualified personnel. In this regard, it is necessary to promote and develop the training system, through the introduction of new educational and digital standards.

Based on the results of the study, it can be noted that at the level of industrial enterprises "green" transition implies modernization of equipment and technological re-equipment of production facilities. In the world practice "green"

transition and implementation of environmental initiatives are stimulated by the state not only in the form of providing various benefits and preferences, but also purely credit and investment support. Tax incentives, permission to apply accelerated depreciation, support of innovation activity and use of financial levers can be effective instruments of state support of "green" transition in the industry of the Republic of Tajikistan.

The primary task of the state in the direction of stimulating the "green" transition is to support measures to green production, development of environmental standards and requirements, development of environmentally friendly technologies, promotion of resource efficiency and reduction of negative impact on the environment. In addition, the development of the certification system and the introduction of "green" technologies allow creating conditions for the development of 'green' entrepreneurship and the formation of "green" brands of domestic products. The formation of a new mechanism of state support and regulation of "green" industry contributes to the competitiveness of industrial enterprises, the formation of a closed-cycle production system, and the expansion of "green" productive employment.

"Green" transition in industry as a concept of improving the competitiveness of industrial enterprises implies the development of a completely new industrial policy, which will be aimed at the formation of "green" industry and the development of mechanisms for decarbonization of industrial production [Alekhina E. I., Parakhova V. N., p. 11]. The outlined trends of the "green" transition in industry also imply the creation of eco-industrial parks, expansion of environmental partnership, restructuring of industrial enterprises based on an ecological approach, development of "green" management, product modification and introduction of waste-free production.

In the conditions of the Republic of Tajikistan "green" transition in industry acts as a strategic factor of the new model of socio-economic development, which is based on ensuring energy efficiency, food security, expansion of productive employment, development of "green" technologies in transport and communication, as well as accelerated industrialization of the economy. Formation of "green" industry and expansion of the practice of implementation of environmental initiatives allow increasing the competitiveness of industry, which is especially relevant in the regional context. For example, in Sughd region as an industrially developed region, where more than 60% of industrial products are produced and where sustainable industrial complexes are concentrated, it is necessary to implement new environmental initiatives on a pilot basis and accelerate the process of "green" transition. In our opinion, ensuring the competitiveness of industrial production based on intensifying the formation of "green" industry also implies the assessment of regional competitiveness taking into account the development of "green" industries.

In the conditions of the Republic of Tajikistan, especially Zeravshan valley of Sughd region after achieving the set goals in the field of green industry development, it is necessary to create a territorial-industrial cluster on the type of "green" industry. Clustering according to the "green" principle implies support for 'green' financing, development and implementation of "green" investment projects. Given the fact that there are no clusters in the economy of our country, it is proposed to cluster the industrial sector of the Zeravshan valley of Sughd region, as well as to ensure the introduction of related industries and their convergence with traditional industries. In our opinion, the creation of a territorial-industrial cluster of the "green" type in the Zeravshan Valley with the conditional name "Zarafshon" will allow integrating the main spheres of the sub-regional economy, particularly the potential of industry, agro-industrial complex, tourism and recreation, as well as pharmaceuticals, hydropower, scientific and educational organizations. "Green" clusters can become a new engine of growth, as industrial concentration, regional environment and geographical conditions allow to realize "green" transition based on clustering. Green convergence clusters allow strengthening the competitiveness of the regional economy.

In our opinion, to improve the competitiveness of domestic products based on the green transition and the implementation of environmental initiatives, it is necessary to promote the development of an ecosystem of green startups, environmentally friendly technologies, support research and development, and create green convergent clusters. In this direction, it is necessary to ensure the introduction of environmentally friendly innovative technologies, develop unique "green" and highly competitive "green" technologies. In addition, an innovative ecosystem should be created to support domestic green technologies and enterprises.

Thus, the green transition in industry and the implementation of environmental initiatives as imperatives to improve the competitiveness of industrial enterprises imply the development of mechanisms of state support for the creation of green industrial enterprises, budgetary and investment support for the green transition, as well as the formation of a national model of personnel training for the transition to a green economy. For this purpose, it is necessary to eliminate the characteristic problems of the "green" transition of the industry of the Republic of Tajikistan, which consist in the presence of sectoral differentiation, lack of systemic measures of state support, underdeveloped system of support and stimulation of environmental initiatives in industrial production, as well as the lack of "green" standards.

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Green energy as a factor of increasing industrial competitiveness

The Republic of Tajikistan ranks sixth in the world and first in Central Asia in terms of green energy production. In the country, 98% of electricity is produced from hydropower resources. According to the Strategy for Development of Green Economy in the Republic of Tajikistan for 2023-2037, the Republic of Tajikistan will become a 'green' country by 2037. This strategic priority is especially relevant in the context of climate change and actualization of the issues of using 'green' energy in order to preserve the global ecosystem and biodiversity. Along with this, the Sustainable Development Goals also emphasize the need and oblige the national state to strive to develop 'green' technologies and protect the global ecosystem.

As world practice shows, green energy plays a strategic role in increasing the competitiveness of the national economy, ensuring independence from imports, stimulating innovation and creating new jobs. The development of green energy contributes to economic diversification and reduces the vulnerability of the economy to fluctuations in global energy prices. This is because the transition to renewable energy sources, such as solar, wind, and hydropower, allows countries to reduce their dependence on imported fossil fuels.

The development of green energy stimulates the growth of industries related to production, installation, maintenance and innovation in this field, which leads to the creation of new jobs. The transition to renewable energy requires new technologies and solutions, which favors innovation and the development of hightech industries. Utilization of renewable energy sources and implementation of energy efficient technologies allows to reduce energy costs, which increases the competitiveness of enterprises.

The development of green energy also contributes to the formation of a new ecosystem of economic relations, especially in the direction of decarbonization of the economy. This in turn contributes to the creation of a favorable image of the country and attractiveness for foreign investments, which also focus on environmental sustainability. In this regard, Tajikistan is actively developing renewable energy sources, which helps to reduce dependence on imports and ensure energy independence, and creates conditions for transition to a green economy (Fig.1.3.3).

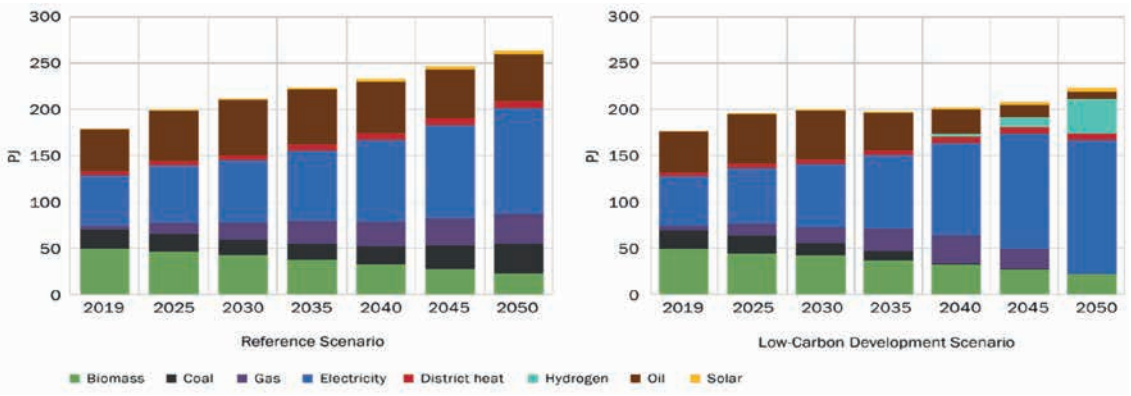


Fig. 1.3.3. Projected final energy consumption by fuel under the Reference and Low-Carbon Development scenarios, by sector, 2019–50 (PJ)

Source: https://www.vsemirnyjbank.org/content/dam/infographics/780xany/2023/apr/presentations/TJK-CCDR-2024-presentation-ENG.pdf

In the developed world, there is also a positive trend in the transition to green energy. For example, the US is investing in green energy development, which creates new jobs and stimulates economic growth. Global economic leaders such as Germany and France are introducing green programmes and technologies to improve energy efficiency and economic sustainability. Today, China - a leader in solar panels and wind turbines, is using green energy for export

dominance. Norway - successfully combines hydropower and oil production, investing profits in green technologies.

In the conditions of the Republic of Tajikistan, green energy can significantly affect the competitiveness of the economy. This is since the transition to RES (renewable energy sources) reduces dependence on fossil fuels (oil, gas, coal), the prices of which are subject to fluctuations. Since cost reduction is an important factor in increasing competitiveness, the development of green energy will lead to a reduction in the cost of energy in the long term. As practice shows, solar and wind energy is already cheaper than conventional energy, and the development of technologies and their scaling will allow them to reduce costs even further.

The development of green energy in the Republic of Tajikistan also stimulates innovation and the formation of new industries. In the conditions of industrial innovative development, innovations and new technologies are the basis for increasing competitiveness. Since green energy creates demand for high-tech industries, its development contributes to the creation of new industries and jobs.

The green energy factor plays a key role in shaping the attractiveness of investment and investment image of the country. This factor increases access to new markets and investments. Experience shows that countries developing green energy attract ESG investments (environmentally oriented) and gain an advantage in markets with strict environmental standards (EU, USA). Green energy not only shapes a country's investment image, but also increases attractiveness for businesses, tourists and skilled professionals. Thus, green energy is not only an important factor in solving environmental problems, but also a key driver of economic growth and increasing the competitiveness of the economy in the long term.

Circular economy in the system of factors of increasing industrial competitiveness

In the conditions of transition to a "green" economy and increasing the pace of accelerated industrialization of the economy of the Republic of Tajikistan, the issues of transition to a closed cycle economy or the so-called circular economy occupy a key place. The relevance of this issue is conditioned by the fact that in the conditions of the Republic of Tajikistan, where resource provision of industrial production in the predominant majority depends on their import, the creation of a closed cycle, especially the transition to zero-waste production and recycling of waste is of strategic importance. In this connection, in the context of peculiarities of consumer society and increase of wastes of different content and composition the development of circular economy processes is of special interest. Formation and development of the circular economy in turn requires theoretical, methodological research, including practical studies.

The development of circular economy in the Republic of Tajikistan is also conditioned by the fact that in the conditions of accelerated industrialization and agricultural development it is necessary to adhere to strict rules and norms of socio-economic and environmental sustainability. In this context, it is also important to implement the principles of "green" economy and reduce the negative impact of industrial production on the environment. From the institutional point of view, the issues of formation of environmentally friendly economy are noted in the annual Addresses of the President of the Republic of Tajikistan to Majlisi Oli of the Republic of Tajikistan, identified in the National Development Strategy of the Republic of Tajikistan for the period up to 2030, in the Strategy for the development of "green" economy in the Republic of Tajikistan for 2023-2037, as well as in other concepts, strategies and government programs.

The review shows that every industry and almost any form of economic activity to some extent affect the environment, causing serious environmental problems. In response to these problems, the UN Conference on Environment and Development in Rio de Janeiro in 1992 adopted the Sustainable Development Strategy, which emphasizes three main goals: preservation of ecological balance, equitable distribution of natural resources between generations, and development of underdeveloped regions.

Studying the implementation of the principles of "circular economy" in the conditions of the Republic of Tajikistan, domestic researchers Solehzoda A.A. and D. Sharifi emphasize the need for its development in the conditions of our country and identify promising directions. According to the authors, agriculture and waste management, water resources management, textile industry, urban planning and construction, waste management and energy sector are the potential sectors for the development of circular economy. [Solehzoda A. A., Dilshod Sh. P. 65]

Sustainable development as a harmonious combination of economy and ecology, is designed to preserve natural wealth and healthy environment for future generations. This requires the implementation of appropriate measures in all spheres and industries. For example, the negative environmental impact of the energy sector can be partially compensated for by using renewable energy sources, and to a greater extent by environmental protection measures in energy installations and energy efficiency improvements in both the production and consumer sectors. Also, the introduction of the circular economy concept can play an important role in reducing the environmental impact of industry and achieving sustainable development goals.

The literature review indicates the multifaceted concept and different types and content of the definition of the circular economy. What is common is the unity of approaches in the importance of circular economy formation, and its prospects in improving the competitiveness of the economy. If we draw parallels between the results of circular eco-

nomic formation and competitiveness indicators, we can conclude that these two strategic directions have numerous interrelationships. Under the conditions where competitiveness is the foundation of modern economy, the formation of circular economy can play an important role in the formation of sustainable competitive advantage.

If, according to numerous studies, the basis for the formation of competitive advantage is leadership in costs, i.e. in its reduction, then the circular economy with its goals and objectives just may become the basis for increasing the competitiveness of the economy. This is since the circular economy by reusing materials from products that have completed their life cycle will lead to a reduction in the cost of raw materials and optimization in the processes of energy consumption.

The relevance of the issues of circular economic development is so obvious that it acts not only as an object of scientific research but is also the subject of discussions of international institutions, governmental and non-governmental organizations. Consequently, today there are different approaches to the implementation of circular economy and development documents. Our research has shown that in the spectrum of different interpretations and definitions, such directions as turning waste into resources, sustainable management of limited resources, as well as maximizing the processes of using production resources act as universal points.

The competitiveness of industry in the conditions of transition to a circular economy is also associated with the formation of the so-called ecological-industrial concept. In this case, the reduction of emissions and waste, recycling or reuse as well as material cycling act as the main prospects. At the present stage, it is also supplemented by new directions such as abandonment of harmful and hazardous technologies, repair and modernization, reconstruction and recycling, as well as re-profiling.

The role of the circular economy and its place in the system of factors for increasing competitiveness is reflected in the so-called material cyclicality. It is related to the fundamental law of economics, i.e. the limited resources, when increasing the efficiency of their utilization will lead to economic growth, and accordingly to the increase in competitiveness. In addition, the circular economy is designed to minimize the use of natural resources and energy, as re-processing and use of resources, in particular waste as a resource to reduce the consumption of primary raw materials, which will lead to lower costs and higher profitability.

As our research has shown, the circular economy is also aimed at reducing waste generation and other forms of negative environmental impact. At the same time, the circular economy assumes that by reusing large quantities of materials from end-of-life products, it will contribute to economic growth. Efficient use of resources will in turn lead not only to material security and reduced dependence on external resource markets, but also to improved environmental and economic performance.

In the conditions of accelerated industrialization of the economy of the Republic of Tajikistan, stability and efficiency of resource use are crucial for increasing the country's competitiveness. In this context, the regenerative mission of the circular economy, which is reflected in the reuse of resources, is important. It is the regenerative function of the circular economy that creates an industrial system from this model, which creates conditions for increasing competitiveness.

The significance of the circular economy in improving the competitiveness of national industry is also due to the fact that it is on the basis of the formation of this model that creates a system of local resource supply not only in terms of material cyclicality, but also in the activation of innovation in the direction of reuse of waste and other resources. Using the principles of circular economy, industrial enterprises can protect natural capital and minimize the use of resources in value chains.

Popova E.V. and Strikh N.I. studying the issues of increasing the competitiveness of industrial enterprises through the transition to the business model of circular economy proved that in those industrial enterprises where such models are used there is an increase in competitiveness indicators. The authors on the basis of the study of foreign practice concluded that the transition to business models of circular economy allows to create competitive advantages not only in the production aspect, but also the formation of image and reputation of enterprises. [Popova E. V., Strikh N. I. P. 48]

The importance of the formation of circular economy to improve the competitiveness of industry in the Republic of Tajikistan is also since it has a huge impact on consumption and consumer behavior. As practice shows, circular economy starts from the earliest stages of the life cycle of a product, and the sphere of production and consumption represents the key direction of circular economy. At the current stage of development, the circular economy represents an innovative paradigm of production and consumption aimed at ensuring sustainable economic growth in the long term.

The practice of some countries shows that the introduction of innovative and resource-efficient methods of production and consumption is stimulated by the implementation of measures and mechanisms for the formation of a circular economy. In this context, circular consumption plays an important role in the functioning of the circular economic system, contributing to sustainable development, minimizing the negative impact on the environment and rational use of natural resources. It should be noted that the consumption phase is critical to prevent waste generation, and the circular economy as a new production and consumption model ensures the sustainability of economic development and enhances its competitiveness.

In the conditions of limited resources, which is especially relevant in the conditions of the Republic of Tajikistan, the reuse of resources and waste are important directions for improving the efficiency of production. This advantage of circular economy allows us to create import-substituting production in a number of directions. In this context, waste management acts as one of the key areas of the circular economy. The importance of this component lies in the fact that the amount of waste is increasing every year due to increased consumption.

As noted in numerous studies waste management and the circular economy model envisages economic growth while minimizing the use of natural resources and energy and maximizing the use of waste as the main raw material in production processes. This is particularly relevant given that natural resources are not infinite and waste storage capacity is also limited. Consequently, the development of waste management systems helps to minimize their negative impact on the environment and move them to porter recycling. [Antonova I. I., Kormishkina L. A., Salimova T. A. [et al.]. p. 145]

Today, industry as a sector of the economy is closely related to other economic activities and is considered as the leading sector of the economy. It plays a dominant role in the formation of gross domestic products and its growth, in the structure of production assets, employment and investment volumes. Modern industrial production, as a rule, is characterized by high material intensity, as it requires large amounts of raw materials, energy, water and is accompanied, as a rule, by excessive and uncontrolled emissions of pollutants into the environment. Therefore, this sector of the economy is directly related to the state of the environment and ecological systems.

Environmental problems and consequences have become an integral part of the industrialization process. Practice shows that mankind, processing natural resources in industrial ways to meet its own needs, has a negative impact on nature. Using natural resources, destroying vegetation and physically altering landscapes, man destroys the environment, and the placement of large amounts of waste contributes to more pollution. [D. Torayev, R. Djumaev. p. 25] Thus, on the one hand, the development of industry has contributed to the improvement of the quality of life, but on the other hand, it has a negative impact on the ecological state of the environment.

In the system of factors for improving competitiveness, the state and quality of the environment become an important factor of development and a limitation for economic growth. It is well known that there is no production process that does not generate a certain amount of waste when transforming input resources into products. Consequently, industrial production has an impact on water, air and soil pollution. Negative environmental consequences of industrial development represent some of the most serious problems of modern society.

The formation of a circular economy is also aimed at building a way of developing society and the economy, in which resources are used efficiently and carefully, and harm to the environment and society is minimized. In this context, the key areas are environmentally and socially responsible production and consumption. Based on this, a circular economy is a system in which waste is reused or recycled and not thrown away. To do this, it is necessary to create an effective system of state support and incentives, aimed at subsidizing promising industries. Along with this, industrial enterprises and other economic structures should not shift their environmental or social costs to society or nature, which requires the creation of an effective system of legislative regulation. In most European countries, circular economy rules are mandatory in every production, especially in the production of plastic for food packaging, cars, batteries, electrical equipment and electronics, construction and textiles. To achieve this, quantitative targets are being introduced in industrial production as requirements for the level of recycled content, and to increase the share of recycled materials, it will be necessary to cooperate with new suppliers and establish partnerships for the recovery of products. [Antonova I. I., Kormishkina L. A., Salimova T. A. [et al.]. p. 225]

In the context of the Republic of Tajikistan, to increase the competitiveness of the national industry, we believe it is important to take into account not only government support measures and regulations, but also an understanding of the risks and opportunities in the circular economy value chain. In our opinion, an effective way to develop a circular economic development strategy is to identify the risks and opportunities associated with the formation of a closed-loop economy.

The ISO 59000 series of international circular economy standards does not have a certification system for environmental management systems, but it includes strategies and indicators that should be used as a reference in the transition to a circular economy. For example, ISO 59010 provides strategic guidance on the transition to a circular business model and the formation of a value chain, while ISO 59020 includes measurable indicators. In this direction, referring to these international standards and formulating their strategy, modern industrial enterprises can maintain and improve the value of their products, which will lead to increased competitiveness.

Thus, to enhance the role of the circular economy in the formation of a sustainable competitive advantage, it is necessary to create a system for the protection and efficient use of natural resources, increasing energy efficiency, and increasing the resilience of society to crises (economic, climatic, etc.). As our study has shown, the circular economy affects the competitiveness of a product already at the stage of product design and the use of recycled raw materials. The circular economy also includes new business opportunities that allow increasing the competitiveness of industry in the context of the transition to a “green” economy.

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1.5. DIGITAL CORPORATE SOCIAL RESPONSIBILITY IN ACTION: A STRATEGIC PATHWAY TO SUSTAINABILITY AND ECONOMIC SECURITY IN THE EUROPEAN UNION

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Abstract *This research paper investigates the strategic role of Digital Corporate Social Responsibility (DCSR) in fostering environmental sustainability and economic resilience among European non-financial firms. Situated within the context of the European Union's Green Deal, Digital Decade Program (2030), and Corporate Sustainability Reporting Directive (CSRD), the study addresses four core research questions: (1) How does digital integration support emissions reduction? (2) To what extent does it drive environmental innovation? (3) How does it enhance resource efficiency? (4) Does DCSR contribute to economic resilience?*

To answer these questions, the paper adopts a mixed-method econometric approach using a balanced panel dataset of 1,652 EU-based firms from 2018 to 2024. Three analytical strategies are employed: two-step System Generalized Method of Moments (GMM) for average effects; Instrumental Variable Quantile Regression for Panel Data (IV-QRPD) to capture distributional heterogeneity; and Structural Equation Modelling (SEM) to explore latent constructs and mediation pathways. Key variables—including emissions reduction, environmental innovation, resource efficiency, and economic resilience—are drawn from Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases.

Empirical findings reveal a significant and positive relationship between digital integration and all three environmental outcomes. Firms with higher DCSR scores demonstrate stronger performance in emissions reduction, more substantial environmental innovation, and greater efficiency in material and energy use. Moreover, SEM analysis confirms that DCSR — through pathways such as digital transparency and stakeholder engagement — significantly enhances firms' economic resilience. These relationships are moderated by sectoral and institutional factors, with technology-intensive firms and those in digitally mature countries showing stronger effects.

This study contributes to the evolving literature on sustainable digitalization by offering robust empirical evidence, theoretical refinement, and methodological innovation. By integrating stakeholder theory, resource-based view, dynamic capabilities, and institutional theory, it provides a multidimensional understanding of how DCSR mediates the link between digital transformation and sustainability outcomes. The results offer actionable insights for corporate leaders and EU policymakers seeking to align digitalization with climate goals and long-term competitiveness.

Keywords: *Digital Corporate Social Responsibility, sustainability, environmental innovation, economic resilience, EU Green Deal, digital transformation*

Introduction

The rapid evolution of digital technologies has fundamentally reshaped the global economic landscape, positioning the European Union (EU) at the forefront of a transformative era characterized by interconnected digital ecosystems and heightened sustainability imperatives. Beyond the technological advancements outlined earlier, such as the Internet of Things (IoT), artificial intelligence (AI), and cloud computing, the integration of these tools into corporate strategies has sparked a paradigm shift toward Digital Corporate Social Responsibility (DCSR). This shift is not merely operational but reflects a broader societal transition toward a human-centric, sustainable, and resilient economic model, as envisioned by the EU's Digital Decade Policy Programme (European Commission, 2020a). The introduction of DCSR as a strategic framework underscores the necessity for firms to align technological innovation with ethical governance, stakeholder expectations, and environmental stewardship, particularly in the context of the EU's ambitious climate and digital agendas.

This study's exploration of DCSR is timely, as the EU navigates a complex landscape of geopolitical tensions, economic volatility, and climate urgency. The European Green Deal, aiming for carbon neutrality by 2050, and the Corporate Sustainability Reporting Directive (CSRD), which mandates enhanced sustainability disclosures, set a high

bar for corporate accountability (European Commission, 2023a). These policies compel firms to adopt digital tools not only for efficiency, but also for transparency and societal impact. However, the adoption of DCSR is uneven across EU member states, with digitally mature economies like Denmark and Sweden outperforming less advanced ones like Romania and Bulgaria, as evidenced by the Digital Economy and Society Index (DESI) (European Commission, 2022a). This disparity highlights a critical need to understand how DCSR can bridge digital and sustainability divides, ensuring inclusive progress across diverse economic and institutional contexts.

Moreover, the transition from Industry 4.0 to Society 5.0 introduces a normative dimension to digital transformation, emphasizing human well-being and social inclusion. Unlike Industry 4.0's focus on automation and efficiency, Society 5.0 prioritizes technology's role in addressing societal challenges, such as climate change and inequality, aligning with the EU's vision of a "human-centric digital transformation" (European Commission, 2020b). DCSR, as a strategic enabler, facilitates this transition by embedding ethical considerations into digital strategies, fostering trust among stakeholders, and enhancing firms' resilience against external shocks, such as supply chain disruptions or energy crises. This expanded introduction frames DCSR as a linchpin for integrating digital innovation with sustainable development, setting the stage for a deeper exploration of its mechanisms and impacts.

The idea of an "information society" — first introduced in the 1970s by futurist Alvin Toffler — envisioned a world where knowledge and technology would become the key drivers of economic and social development (Toffler, 1980). Today, that vision has materialized. However, with digital power comes responsibility. In the EU, the concept of DCSR is gaining momentum as a strategic framework that enables companies to align technological innovation with ethical practices, sustainability goals, and long-term resilience.

Recent years have brought unprecedented challenges to the global economy, from the COVID-19 pandemic to intensifying trade conflicts and growing geopolitical tensions. These disruptions have made the business environment more volatile, unpredictable, and demanding. In response, enhancing sustainability has increasingly become one of the most effective strategies for organizations seeking to build resilience and adapt to external shocks (Ji et al., 2023).

In academic discourse, the terms *sustainability* and *sustainable development* generally refer to the balance between economic progress and environmental stewardship. When applied to the corporate context, sustainable development is understood as a comprehensive framework that integrates environmental, social, and economic dimensions. It emphasizes long-term thinking and aims to meet the needs of the present without compromising the ability of future generations to thrive (Klimek, 2020). This perspective calls on companies to go beyond profit-making and consider their broader impact on society and the planet.

Within the EU, this transformation is embedded in broader frameworks like Society 4.0 and Economy 4.0, which reflect a future-oriented vision of development. These concepts emphasize human-centred innovation, digital responsibility, and environmental sustainability as core pillars of progress in the digital age (Kwilinski et al., 2023). One of the flagship initiatives advancing this vision is the Digital Europe Programme, which aims to equip the EU with high-performance digital infrastructure, advanced computing capacity, and cybersecurity systems. The overarching goal is to make Europe a global leader not only in innovation and productivity, but also in green, inclusive, and resilient economic development (Misuraca et al., 2012; Burdiuzha et al., 2020).

Yet, as digital technologies become more embedded in all aspects of economic and social life, new responsibilities arise. Issues such as data ethics, digital exclusion, algorithmic bias, and environmental costs of IT infrastructures demand deeper reflection on how companies operate in digital environments. It is in this evolving context that DCSR emerges as a vital tool for firms. DCSR enables companies to navigate uncertainty, align with sustainability goals, and strengthen their adaptive capacity by integrating ethical, social, and environmental concerns into their digital strategies.

However, a growing body of research and policy discourse suggests that Industry 4.0 is no longer sufficient as a guiding paradigm. A new model — Society 5.0 — is gaining ground, especially in policy frameworks and innovation ecosystems concerned with human dignity, social inclusion, and shared prosperity. Originating in Japan and now increasingly referenced in the EU, Society 5.0 builds upon the foundations of Industry 4.0 but places human well-being at the centre of technological development. It envisions a society where digital innovation is not an end, but a means to solve pressing societal challenges — from climate change to demographic shifts and digital inequality.

This shift from Industry 4.0 to Society 5.0 requires businesses to rethink not only *what* they innovate, but *why* and *for whom*. It calls for a deeper integration of DCSR into corporate strategy, where technology is leveraged to serve broader social and environmental purposes. In this transition, DCSR acts as a bridge: it connects the technological capabilities of the Fourth Industrial Revolution with the value-driven, human-centric aspirations of the Fifth.

For the EU — with its commitment to democratic governance, sustainability, and digital sovereignty — this conceptual evolution offers both an ethical imperative and a competitive advantage. Firms that embrace DCSR within a Society 5.0 framework are more likely to remain resilient, trusted, and future-fit, especially as regulatory expectations and stakeholder demands continue to evolve.

The rapid pace of technological innovation has become a defining feature of Europe's digital transformation. But turning Europe into a digital leader requires more than just free Wi-Fi and the removal of roaming charges. While such measures improve access, they are only the surface layer of a much deeper structural shift. At the core of this transformation lies the digitization of the economy — a process that includes automation, advanced robotics, and smart manufacturing systems — all of which are creating new economic opportunities that were previously unimaginable.

Crucially, governments across the EU increasingly recognize that digitalization must be guided by clear and inclusive strategies. In February 2020, the European Commission launched its Digital Strategy, emphasizing that digital transformation is not a distant concept but a lived reality for every individual and business. The strategy clearly states that digital progress should not benefit a privileged few, but rather bring value to every European citizen, every EU-based company, and ultimately contribute to global well-being (European Commission, 2020b). Building on this vision, the Digital Decade Policy Programme (2030) sets ambitious targets: by 2030, at least 75% of EU enterprises should be using advanced digital technologies such as cloud computing and AI, all households should have access to gigabit connectivity, and key public services must become fully digital. The strategy also embeds a strong governance model based on annual progress reports and multi-stakeholder coordination (European Commission, 2023a).

According to the 2025 "State of the Digital Decade" Report, while notable progress has been made in public sector digitalisation and cross-border cooperation, critical gaps remain in AI adoption, semiconductor supply chains, and digital skills development — areas that directly affect the resilience of European businesses (European Commission, 2025a).

In response to growing geopolitical turbulence and the need for digital sovereignty, the EU also launched its International Digital Strategy in June 2025. This framework seeks to position Europe as a reliable global partner in shaping trustworthy, human-centric digital ecosystems by investing in partnerships for AI, cybersecurity, and sustainable infrastructure (European Commission, 2025b).

Across the globe, governments, institutions, and media outlets increasingly place climate action — particularly emission reduction — at the top of their agendas. Cutting carbon emissions is no longer viewed as a niche environmental issue; it is now recognized as a foundational requirement for long-term ecological and economic sustainability. Global attention is especially focused on industrial sectors with high energy consumption, particularly in major emitters such as China and the United States (Karlilar et al., 2023; Gorokhova, 2024).

This international pressure is reflected in the growing body of climate-related legislation and policy frameworks, both at national and supranational levels. In the EU, for instance, initiatives like the European Green Deal and the Fit for 55 packages aim to position the region as a global climate leader, calling on businesses of all sizes to align their operations with carbon neutrality goals.

In this context, business owners and corporate leaders can no longer remain passive. They are expected to take an active role in tackling climate change, not only to comply with regulations but to contribute meaningfully to the global sustainability transition.

The scale and complexity of the climate crisis — combined with ongoing resource scarcity — demand a systemic shift toward a new model of growth. As defined by the World Commission on Environment and Development, sustainable development (SD) is the ability to meet present needs without compromising the ability of future generations to meet theirs. This concept rests on three interconnected pillars: environmental protection, economic development, and social inclusion (Marinakis & White, 2022).

As digital technologies increasingly permeate industries, households, and financial systems, it becomes more difficult to clearly separate the direct and indirect environmental effects of information and communication technology (ICT). The accelerating pace of digitalization — reinforced by globalization — continues to shape both how these technologies are adopted and how they influence ecological outcomes (Skare & Ribeiro Soriano, 2021; Danish et al., 2018).

The academic community has responded with a growing body of research examining the complex interplay between digital transformation and sustainability. While ICT has the potential to optimize resource use and reduce emissions, some studies highlight its unintended consequences. For instance, Ahmed et al. (2021) argue that globalization and ICT expansion may, paradoxically, contribute to increased CO_2 emissions despite technological advancements — particularly when coupled with urban growth and consumption patterns that strain ecosystems.

At the same time, the substitution of physical activities with digital alternatives — such as e-commerce, virtual meetings, remote education, and digital banking — is shown to reduce the need for travel and lower associated emissions (Adeleye et al., 2021). These changes represent a structural shift in how goods and services are produced and consumed in the digital era.

Moreover, digital innovation and automation are transforming workplace dynamics. Robotization and data-driven management tools have been linked to gains in productivity, leaner operations, and more efficient use of both human and material resources (Ballestar et al., 2021; Al-Omoush et al., 2020; Bai et al., 2021; Klimant et al., 2021; Gorokhova et al., 2024). Importantly, these advances do not merely optimize existing processes — they also strengthen firms'

capacity for resilient and sustainable production, even under adverse conditions such as global pandemics.

Despite growing interest in the environmental implications of digital transformation, this area of research remains relatively underexplored. Existing studies have started to uncover some of the potential benefits of digital innovation for sustainability outcomes. For example, Chen and Hao (2022) examine how corporate governance structures — particularly board composition — can influence environmental performance during digital transformation processes. Similarly, Cheng Cheng et al. (2021) highlight the role of emerging energy-efficient technologies in reducing carbon emissions. Other findings are even more striking: Kurniawan (2022) reports that applying digital tools to the management of non-decomposable waste streams can lead to a 65% reduction in waste, demonstrating how digitalization can actively support environmental goals.

Nevertheless, broader firm-level empirical evidence remains inconsistent. Many studies fail to establish a strong, causal link between digital transformation and improved environmental outcomes. This ambiguity points to a critical research gap: without robust, interdisciplinary investigation into the relationship between digital innovation and green performance, businesses may struggle to formulate effective and responsible digital strategies.

As Wang et al. (2022) argue, examining the nuanced interdependencies between digital technologies and pollution levels is not just an academic concern — it is a strategic imperative. Understanding these dynamics can help policymakers and corporate leaders design targeted interventions that maximize the environmental benefits of digitalization, while mitigating unintended harms.

By embedding environmental accountability into the digital transformation process — from green IT procurement to the eco-design of digital services — DCSR encourages companies to align innovation with environmental stewardship. However, to fully leverage this potential, more granular empirical research is needed to illuminate the conditions under which digitalization becomes an enabler of sustainable development rather than a contributor to environmental degradation.

Empirical evidence from multiple regions suggests that digital transformation can significantly influence corporate environmental performance. While several recent studies from China provide a valuable foundation — for example, Li et al. (2020; 2023) measure environmental outcomes through reductions in air pollutants, wastewater, and solid waste — these findings echo a broader global trend.

Across various national contexts, researchers are developing frameworks to assess how companies embed environmental goals into digital strategies. In Chinese and Southeast Asian surveys (Li, 2022; Zhou & Liu, 2023), environmental status is often measured using criteria such as:

- Whether the firm actively monitors and measures its environmental impact.
- Whether environmental sustainability is one of the company's strategic objectives.
- Whether employees actively support environmental protection initiatives (Li, 2022; Zhou & Liu, 2023).

Based on this comparative foundation, the present study focuses on the EU and investigates how digital integration contributes to environmental performance in business settings. It specifically explores the influence of digital technologies on emissions reduction, environmental innovation, and resource efficiency in EU-based firms.

This study addresses the following four research questions to explore the intersection of digital transformation, environmental sustainability, and business resilience in the European context:

- In what ways does the integration of digital technologies support the reduction of carbon and industrial emissions within European enterprises?
- How are digital transformation processes linked to the development and implementation of environmentally oriented innovations in EU-based companies?
- To what extent does the adoption of digital tools and systems enhance the efficiency of resource utilization across European business operations?
- To what extent does DCSR contribute to the economic resilience and security of firms in the EU?

This study draws on a balanced panel dataset of 1,652 Environmental, Social, and Governance (ESG)-reported companies per year, drawing from Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases from 2018 to 2024. The data includes detailed annual disclosures aligned with evolving EU sustainability standards, such as the CSRD, which improves data transparency and cross-country comparability.

To capture the complex relationship between digital transformation and firm-level sustainability performance, the study employs a multi-method empirical strategy:

- GMM is applied to estimate the average effects of digital integration on emissions reduction, environmental innovation, and resource efficiency, while accounting for endogeneity, serial correlation, and firm-level heterogeneity (Wintoki et al., 2012).

- IV-QRPD, based on Powell (2016), is used to explore how these relationships vary across the performance distribution. This allows us to identify whether digital transformation has stronger effects on underperforming or leading firms, particularly in terms of environmental outcomes.

To answer the fourth research question — concerning the extent to which DCSR contributes to the economic resilience and security of firms — we employ SEM (Kline, R. B., 2015). This method is particularly appropriate given that both DCSR and resilience are latent constructs composed of multiple interrelated dimensions, such as transparency, stakeholder engagement, innovation capability, financial flexibility, and crisis responsiveness. SEM enables us to model these constructs explicitly and examine direct and indirect causal pathways between digital responsibility practices and firm-level resilience within the EU context.

This combination of methods ensures that the analysis is both statistically rigorous and theoretically grounded, offering insights into both the average and distributional effects of digital transformation, and allowing for a deeper conceptual understanding of how DCSR supports long-term business sustainability and stability.

After accounting for sector-specific and time-fixed effects, the analysis reveals that digital integration has a statistically significant and positive influence on emissions reduction, environmental innovation, and corporate resource efficiency. These outcomes underscore the transformative role of digital technologies in advancing not only operational performance, but also broader sustainability outcomes at the firm level.

From a theoretical perspective, these findings contribute to ongoing discussions on the integration of DCSR into the architecture of corporate sustainability. Notably, the use of SEM in this study allows for a more nuanced understanding of how complex, multi-dimensional constructs such as DCSR affect firms' adaptive capacities and environmental behaviours. By modelling latent variables like digital ethics, transparency, and resilience, SEM reveals both direct and indirect pathways through which digital responsibility enhances long-term business viability.

These insights carry important implications for public policy, strategic management, and sustainability-oriented governance. First, they provide evidence to support regulatory efforts—such as the EU's CSRD and Green Deal initiatives — that encourage firms to embed environmental considerations into their digital transformation. Second, the results offer a data-driven foundation for business leaders seeking to align their digital strategies with environmental and social impact goals. Lastly, they open new avenues for future research, particularly into how DCSR mediates the relationship between technological adoption and organizational resilience in diverse institutional settings.

The intersection of digital transformation and ESG practices represents a rapidly evolving and theoretically rich domain of inquiry. Yet despite its growing relevance, existing research continues to display notable blind spots. While the adoption of digital technologies across industries is accelerating, their direct impact on corporate sustainability performance — especially among non-financial firms in Europe — remains insufficiently understood. Much of the literature has concentrated on the financial sector or treated ESG as a generalized framework, failing to examine how sector-specific dynamics influence the relationship between digital integration and sustainability practices.

This narrow focus risks overlooking industry-specific opportunities, barriers, and regulatory contexts, which are essential for designing effective policies and business strategies. Moreover, methodological shortcomings in previous studies — such as neglecting temporal dynamics, reverse causality, and endogeneity — raise questions about the reliability of causal inferences regarding the sustainability benefits of digitalization.

To address these gaps, the present study employs a robust six-year panel dataset (2018–2024) and a combination of advanced econometric techniques. First, we utilize the GMM to control for unobserved heterogeneity and dynamic feedback effects. Second, we apply IV-QRPD to investigate how the effects of digital integration vary across the ESG performance distribution — highlighting disparities between high-performing and lagging firms. Third, and critically, we incorporate SEM to capture the complex, multidimensional nature of DCSR and its causal pathways to economic resilience and sustainability outcomes. SEM enables us to model latent constructs such as transparency, stakeholder engagement, and innovation orientation, offering a deeper understanding of how DCSR mediates the digital–sustainability nexus.

By triangulating these methodologies, our research contributes not only empirical evidence but also a conceptual and methodological refinement to the study of digital responsibility. The findings aim to inform EU-level policymaking, ESG reporting standards, and strategic business planning at a time when digital infrastructure, ethical innovation, and sustainability are more interconnected than ever.

This study contributes to the growing body of research exploring the link between digital integration and ESG performance, offering a theoretical lens through which to understand how emerging technologies can serve as powerful drivers of sustainable corporate behaviour. We expand this discourse by showing that digital transformation, when aligned with DCSR principles, is not merely a technological shift, but a key enabler of long-term sustainability and economic resilience in the European business context.

Through empirical evidence and structural modelling, we demonstrate that digital tools — when applied responsibly — can foster environmental innovation, enhance resource efficiency, and support the broader ESG agenda across diverse industries. Our findings provide a meaningful contribution to both academic theory and practical frameworks for responsible digitalization.

Theoretical Framework

To comprehensively explore the strategic role of DCSR in fostering sustainability and economic resilience within European firms, this study employs a robust theoretical framework grounded in four complementary perspectives: Stakeholder Theory, Resource-Based View (RBV), Dynamic Capabilities Theory, and Institutional Theory. These frameworks collectively address the internal capabilities, external pressures, and relational dynamics that shape DCSR's implementation and impact.

Stakeholder Theory posits that firms must address the expectations of diverse stakeholders — regulators, investors, consumers, employees, and civil society — to maintain legitimacy and achieve sustainable performance (Freeman et al., 2010). In the context of DCSR, this theory frames digital technologies as tools to enhance transparency, accountability, and engagement with stakeholders demanding ethical and sustainable practices. For instance, the CSRD mandates detailed environmental, social, and governance (ESG) disclosures, compelling firms to adopt digital platforms for real-time reporting, such as blockchain-based systems for supply chain transparency (Saberi et al., 2019). These technologies enable firms to meet consumer demands for verifiable sustainability claims, as seen in the case of European retailers like H&M, which uses digital traceability to disclose sustainable sourcing practices (H&M, 2024).

Moreover, Stakeholder Theory highlights DCSR's role in fostering trust amid growing scrutiny over digital practices, such as data privacy and algorithmic fairness. The General Data Protection Regulation (GDPR) and the forthcoming AI Act underscore regulatory expectations for ethical data use, positioning DCSR as a proactive strategy to align with these norms (European Commission, 2020b). By integrating stakeholder expectations into digital strategies, firms not only enhance their social license to operate but also mitigate risks of reputational damage, as evidenced by high-profile data breaches that have eroded consumer trust (Floridi & Cowls, 2019). This relational perspective underscores DCSR's capacity to bridge corporate objectives with societal values, aligning with the EU's human-centric digital transformation goals.

Second, RBV emphasizes that firm-specific resources and capabilities — such as digital infrastructure, data analytics expertise, and organizational culture — are critical for achieving competitive advantage (Barney, 1991). DCSR leverages these resources to drive sustainability and resilience, positioning them as inimitable assets in the European market. For example, advanced digital infrastructure, such as 5G networks and cloud computing, enables firms to implement IoT systems for real-time emissions monitoring, as demonstrated by Siemens' smart factories that reduced energy consumption by 15% between 2018 and 2023 (Siemens, 2023). Similarly, data analytics capabilities allow firms to optimize resource use, with Unilever's AI-driven supply chain analytics reducing packaging waste by 30% in its European operations by 2024 (Unilever, 2024).

Beyond technological resources, RBV highlights the role of organizational culture in embedding DCSR into corporate strategies. Firms with a sustainability-oriented culture, such as those adopting ISO 14001 standards, are better positioned to integrate digital tools with environmental goals, creating a virtuous cycle of innovation and performance (Hart, 1995). In the EU context, where digital maturity varies (e.g., Denmark's DESI score of 72.3 vs. Romania's 41.2), RBV suggests that firms in digitally advanced regions can leverage superior infrastructure to differentiate themselves, while those in less advanced regions can build competitive advantage through scalable, cloud-based DCSR solutions (European Commission, 2022a). This perspective underscores DCSR's role as a strategic differentiator, aligning internal capabilities with external sustainability demands.

Third, dynamic capabilities theory focuses on a firm's ability to integrate, build, and reconfigure competencies to address rapidly changing environments (Teece et al., 1997; Gorokhova et al., 2023). In the context of DCSR, dynamic capabilities enable firms to adapt digital technologies to navigate systemic shocks, such as supply chain disruptions, energy crises, or regulatory shifts. For instance, during the 2022 energy crisis triggered by geopolitical tensions, European firms like Vestas used AI-driven predictive analytics to optimize wind turbine operations, enhancing energy efficiency and resilience (Vestas, 2023). This adaptability aligns with the EU's Digital Decade goal of fostering agile, technology-driven economies (European Commission, 2020a).

DCSR-related dynamic capabilities include sensing opportunities (e.g., identifying new digital tools for sustainability), seizing them (e.g., investing in IoT for resource tracking), and transforming organizational processes (e.g., redesigning supply chains for circularity). These capabilities are particularly critical in high-DESI countries, where firms can leverage advanced digital ecosystems to innovate rapidly, but they also offer scalable solutions for less digitally mature regions through modular technologies like cloud-based ESG platforms. Dynamic Capabilities Theory thus frames DCSR as a strategic enabler of resilience, allowing firms to respond to external volatility while advancing sustainability objectives.

Finally, what examines how firms conform to external norms, standards, and regulations to gain legitimacy and ensure survival (DiMaggio & Powell, 1983). In the EU, policies like the Green Deal, CSRD, and the Digital Decade Programme create a regulatory environment that positions DCSR as a strategic necessity rather than a voluntary initiative. The CSRD, for instance, requires firms to report detailed ESG metrics, driving the adoption of digital tools like AI for data analytics and blockchain for auditability (European Commission, 2023a). Firms aligning with these regulations, such as those in Northern Europe with high DESI scores, gain legitimacy and market access, as seen in Denmark's leadership in digital sustainability reporting (European Commission, 2022a).

Institutional pressures also manifest through isomorphic mechanisms — coercive (e.g., regulatory compliance), mimetic (e.g., emulating industry leaders), and normative (e.g., adopting sustainability standards like ISO 14001). For example, coercive pressures from the CSRD compel firms to invest in digital reporting systems, while mimetic pressures drive SMEs to emulate larger firms like Siemens in adopting IoT for emissions reduction (Berthod, 2016; Gorokhova et al., 2024). Normative pressures, reinforced by stakeholder expectations and industry benchmarks, further incentivize DCSR adoption, particularly in sectors like technology and utilities, where digital innovation is a competitive norm. Institutional Theory thus highlights DCSR's role in aligning firms with the EU's evolving regulatory and societal expectations, ensuring both legitimacy and strategic positioning.

Building on the four core theories, digital ethics emerges as a critical lens for understanding DCSR's broader implications. Digital ethics addresses responsible data use, algorithmic fairness, and transparency in AI-driven processes, which are increasingly integral to sustainability strategies (Floridi & Cowls, 2019). Stakeholder Theory intersects with digital ethics by emphasizing accountability to consumers and regulators, as seen in GDPR-compliant data practices that enhance trust. RBV views ethical digital practices as unique resources, such as proprietary algorithms for fair decision-making, which confer competitive advantages. Dynamic Capabilities enable firms to adapt ethical frameworks to evolving regulations, such as the AI Act, while Institutional Theory underscores the need to align with ethical norms to maintain legitimacy in the EU's policy-driven market. For example, Philips' use of ethical AI in healthcare analytics demonstrates how DCSR integrates digital ethics to enhance patient trust and regulatory compliance (Philips, 2024).

Together, these four perspectives offer a robust and multidimensional foundation for understanding how digital responsibility shapes corporate sustainability strategies and resilience outcomes in the European context.

The RBV has long served as a foundational theory in strategic management, emphasizing the role of firm-specific resources and capabilities in achieving competitive advantage and superior performance (Barney, 2000). In the digital age, the RBV remains particularly relevant, as companies increasingly rely on intangible assets — such as digital infrastructure, data governance systems, and human digital competencies — to navigate complex and uncertain environments.

In the context of DCSR, RBV suggests that firms capable of mobilizing and aligning their internal digital resources — especially those that are valuable, rare, inimitable, and non-substitutable (VRIN) — can build a sustainable competitive edge. This includes not only technical infrastructure (e.g., data platforms, AI-based decision systems), but also organizational routines, knowledge flows, and environmental management systems that support resource efficiency, emissions reduction, and sustainability innovation.

Digital transformation, as a strategic process, enables firms — particularly those that did not emerge as digital natives — to reconfigure their value chains and expand into new markets through tools like e-commerce, digital logistics, or smart product design (Kehinde et al., 2022; Pergelova et al., 2019; Gorokhova et al., 2024). These capabilities are essential for international competitiveness, especially in the context of EU-wide environmental regulations and expectations around ESG transparency.

However, the role of digital resources in promoting environmental performance remains debated. Some scholars highlight the double-edged nature of digitalization: while advanced ICT systems can optimize resource use and reduce waste, they may also increase energy demand, contribute to electronic waste, and generate rebound effects — particularly in later stages of digital maturity (Chen et al., 2020; Li et al., 2023). According to Li et al. (2023), the environmental benefits of digital technologies tend to follow a curvilinear pattern, where gains are strongest in early adoption phases and may taper off or reverse if unmanaged.

Importantly, digital technologies also enhance the ability of firms to manage environmental data, coordinate sustainable production, and streamline CSR reporting processes. As Broccardo et al. (2023) and Lindfors (2021) note, effective sustainability management now depends on digital capabilities for data integration, analytics, and traceability, making these tools central to both strategic control and external accountability.

In line with RBV, we conceptualize DCSR-related digital integration as a capability-generating mechanism that allows companies to convert internal resources into strategic advantage in environmental domains

Stakeholder theory offers a compelling lens through which to examine how businesses align their digital transformation strategies with broader societal expectations. At its core, this theory suggests that organizations achieve more stable and sustainable performance when they actively cultivate meaningful relationships with their stakeholders — ranging

from investors, customers, and employees to policymakers, NGOs, and the general public (Abdullah et al., 2016).

In the context of DCSR, stakeholder theory highlights the importance of transparency, ethical behaviour, and responsiveness in the use of digital technologies. Companies that adopt inclusive and participatory digital practices — such as transparent data use, responsible AI deployment, or open environmental reporting — signal their commitment to public interest, not just profit. This not only strengthens their reputational capital but also positions them as trusted actors within increasingly regulated and socially sensitive markets.

By proactively engaging stakeholders — through digital channels, consultation processes, or open sustainability platforms — companies can reduce uncertainty around environmental expectations and shifting policy landscapes. As shown in the literature (Zailani et al., 2019), such engagement also contributes to more efficient resource allocation, stronger consumer loyalty, and improved talent retention. These are especially important benefits in a European context where regulatory standards (e.g., CSRD, EU Taxonomy) and social scrutiny around sustainability are intensifying.

Moreover, stakeholder-responsive firms are better equipped to handle environmental risks and legitimacy pressures. For example, adopting advanced Environmental Management Accounting (EMA) systems — supported by digital tools — can improve how companies track and optimize their environmental impacts. This helps not only in fulfilling stakeholder demands, but also in enhancing operational and financial performance over time (Hofer et al., 2012).

Within this framework, DCSR becomes a strategic bridge between internal digital capabilities and external stakeholder expectations. Our study integrates this theory into the empirical model to explore how stakeholder-oriented digital strategies — modelled through SEM — influence firm-level outcomes in terms of environmental innovation, emissions management, and resilience. This approach recognizes that trust, legitimacy, and inclusion are not peripheral concerns, but central enablers of sustainable digital transformation.

While having digital tools and infrastructure is important, what truly sets resilient firms apart is how they use these assets in changing environments. This is where Dynamic Capabilities Theory becomes particularly relevant. At its core, the theory emphasizes a firm's ability to sense, seize, and reconfigure internal and external resources in response to opportunities and threats (Teece et al., 1997; Teece, 2014). In fast-evolving contexts like digitalization, climate change, and geopolitical instability, these dynamic capabilities are essential for long-term survival and adaptability.

In relation to DCSR, dynamic capabilities reflect how companies strategically mobilize their digital competencies — not just to improve operations, but to align with environmental goals, social expectations, and regulatory shifts. This includes developing flexible sustainability reporting systems, creating adaptive AI-based decision-making processes, or using blockchain for transparent ESG tracking.

For European companies operating under increasing pressure from the EU's Green Deal, CSRD, and the Digital Decade Policy Programme, dynamic capabilities determine how effectively they can anticipate regulatory changes and reconfigure their digital tools accordingly. Firms that successfully integrate DCSR into their core strategy are often those that have cultivated such adaptive capacity.

Research shows that companies with well-developed dynamic capabilities are better positioned to turn systemic disruptions — like the COVID-19 pandemic or energy price shocks — into opportunities for innovation and green transformation (Teece, 2018; Cabrilo & Dahms, 2020). Such companies can pivot more quickly toward circular business models, low-carbon solutions, or stakeholder-driven digital platforms, enhancing both resilience and legitimacy.

From an empirical standpoint, dynamic capabilities are not static traits but emerge over time through learning, experimentation, and strategic renewal. In our study, we capture this dimension by using SEM to model the indirect pathways through which digital tools, when embedded in organizational routines and decision-making structures, contribute to environmental innovation and economic robustness.

Ultimately, this perspective allows us to frame DCSR not as a fixed set of digital practices, but as an evolving strategic capacity — a way for firms to continually adapt, respond, and lead in the face of uncertainty.

To survive and thrive, companies don't operate in isolation — they must align with the broader societal and regulatory environments in which they function. This is the central idea of Institutional Theory, which views firms as deeply embedded in systems of norms, rules, and expectations. According to this theory, businesses gain legitimacy — and reduce uncertainty — by conforming to the dominant standards of their time, whether legal, ethical, or cultural (Berthod, 2016).

In the current European context, this means that DCSR is no longer just a voluntary choice; it is increasingly seen as a strategic response to institutional pressures. With the rise of EU-level frameworks like the CSRD, the European Green Deal, and the Digital Decade Policy Programme, companies are now expected to implement transparent, traceable, and tech-enabled sustainability practices.

Institutional environments don't just dictate rules — they also shape values. As recent literature shows, institutions provide behavioural templates, moral standards, and societal norms that influence how organizations design policies, measure performance, and communicate responsibility (Bitektine et al., 2018). In practice, this includes everything

from adopting green technologies, to complying with ESG reporting standards, to responding to growing consumer and investor expectations for climate action.

Firms operating in Europe today are under increasing pressure not only from legislators, but also from consumers, employees, NGOs, and capital markets. These stakeholders now expect businesses to actively contribute to environmental protection, social inclusion, and digital ethics. Companies that fail to meet these expectations risk losing legitimacy — and, with it, market access, public trust, and funding opportunities.

In this context, digital integration is more than a technical upgrade. It's a way for firms to meet institutional demands: from streamlining environmental monitoring, to improving the accuracy of carbon disclosures, to implementing sustainable procurement through blockchain. By embedding DCSR into their operations, companies signal their alignment with evolving regulatory and normative regimes, which enhances both their reputation and compliance readiness.

Since the 1990s, environmental and social concerns have steadily moved to the forefront of corporate agendas, not just at the operational level but also as part of long-term strategy. This shift gained additional urgency following COP23, the UN Climate Change Conference, which called on companies to take greater responsibility for their environmental impact throughout the entire production and value chain (United Nations, 2017). Today, sustainability is no longer a side activity — it must be woven into the very fabric of a company's strategy, planning processes, and organizational culture.

To truly contribute to sustainability and improve long-term financial performance, businesses must adopt a holistic approach that integrates social and environmental goals across all levels of decision-making. However, translating these goals into practical action is far from straightforward. Companies interpret and implement sustainability in varied ways, depending on factors like industry context, organizational size, structure, or maturity.

This diversity in approach underscores the need for adaptable tools and methods. These include sustainability reporting systems, real-time monitoring platforms, advanced digital technologies, and green-oriented business process redesign. Forward-looking companies also invest in sustainable product development, using innovation to reduce ecological footprints while creating market value (Broccardo et al., 2023). In this context, digital technologies — and particularly DCSR — play a critical role in operationalizing sustainability principles in diverse organizational environments.

A company's ability to respond effectively to urgent environmental and social challenges is no longer just an ethical concern—it has become a strategic imperative. Successfully navigating these challenges creates new forms of value, both for the business itself and for its broader ecosystem of stakeholders (Breton, 2015). As the literature suggests, sustainability is now considered essential not only for corporate performance but also for meeting the expectations of investors, regulators, and civil society (Nekhili et al., 2017). A well-rounded understanding of sustainability — one that balances economic growth, environmental stewardship, and social responsibility — is critical for long-term resilience (Bergman et al., 2018).

However, managing sustainability is not a one-time initiative; it requires continuous investment, strategic focus, and internal alignment. Businesses increasingly allocate resources to sustainability initiatives for multiple reasons: to enhance competitiveness, to build legitimacy, or to support internal capacity-building and organizational learning (Mohapatra, 2023; Windolph et al., 2014). In many cases, external pressures — such as evolving legal frameworks and growing stakeholder expectations — serve as key drivers for deepening corporate sustainability commitments (Testa et al., 2016).

The transition to a low-carbon digital economy is often presented as a win-win scenario, though its benefits have not always been evenly distributed or fully realized. For example, evidence from China's carbon emissions trading pilot programme suggests that digital technologies have significantly accelerated the growth of low-carbon enterprises (Zhang et al., 2022). Similarly, recent interregional panel data analysis indicates that a higher development level of the digital economy (DLDE) correlates with lower CO_2 emissions and promotes regional diffusion of green practices (Hao et al., 2022).

These insights emphasize that the intersection of digitalization and sustainability is not theoretical — it is measurable and already shaping outcomes. For European businesses, this means rethinking how DCSR can help embed low-carbon principles and social goals into their core business models.

A striking example of how digital technologies can enhance Corporate Environmental Responsibility (CER) comes from China. The e-commerce giant JD.com has implemented several forward-looking initiatives within the digital economy to reduce its environmental footprint. For instance, its data centres have adopted energy-saving technologies, such as indirect evaporative cooling systems and variable-frequency drives, which have significantly decreased annual energy consumption. These measures not only improved energy efficiency but also contributed to the company's broader sustainability goals (Meng et al., 2023).

An approach to digitally enabled environmental responsibility can be observed in the European retail and logistics sector, particularly through the example of IKEA. The company has increasingly integrated digital tools to support its ambitious sustainability goals. IKEA's automated warehouse systems and IoT-enabled logistics help optimize storage, reduce energy consumption, and minimize waste throughout the supply chain.

For instance, the implementation of real-time inventory data platforms not only increases efficiency, but also prevents overproduction and overstocking, which are major contributors to carbon emissions. Additionally, IKEA invests

in AI-powered route optimization for its delivery fleet, cutting down fuel consumption and CO_2 emissions significantly. According to its 2023 Sustainability Report, these efforts helped reduce the company's transport emissions per product delivered by over 20% compared to 2016 levels.

IKEA has also adopted recyclable packaging systems and encourages circular product design by offering digital repair guides and spare parts ordering through its online platforms. This demonstrates how DCSR tools can support not only environmental stewardship but also customer empowerment and transparency — key elements in building long-term trust and legitimacy within the EU's regulatory environment.

This leads us to the following:

Hypothesis 1 (H1). Companies that adopt higher levels of digital integration — through technologies such as AI, IoT, big data analytics, and cloud computing — are more likely to reduce their carbon and other greenhouse gas emissions. This is due to increased efficiency in energy usage, improved emissions monitoring systems, and data-driven optimization of industrial and operational processes. Digital tools enable real-time tracking of emissions and operational inefficiencies. When integrated into sustainability strategies, these technologies help companies detect environmental hot spots, optimize energy use, and automate resource-intensive processes. This aligns with institutional theory, where compliance with environmental regulations and EU climate targets (e.g., Green Deal, CSRD) becomes a driver for technology adoption.

Hypothesis 2 (H2). Digital integration fosters environmental innovation in European companies by enabling the development and implementation of eco-friendly technologies, smart products, and sustainable business models. Digitally enabled firms are better positioned to engage in open innovation, eco-design, and green R&D. Technologies such as digital twins, blockchain, and circular data platforms enhance the capability to test, simulate, and validate low-carbon innovations before market deployment. This hypothesis draws on the RBV, which suggests that firms with advanced digital infrastructure gain a strategic advantage in sustainable innovation.

Hypothesis 3 (H3). Digital transformation significantly improves resource efficiency in European businesses by reducing input waste, optimizing production processes, and facilitating smarter logistics and supply chain management. Digital platforms allow for more accurate forecasting, real-time inventory management, and lean production practices. As a result, firms can minimize material overuse, energy loss, and operational redundancy. Stakeholder theory supports this perspective by highlighting how resource efficiency enhances transparency and meets the rising expectations of customers, regulators, and investors.

Hypothesis 4 (H4). The implementation of Digital Corporate Social Responsibility practices contributes positively to firms' economic resilience and security by strengthening stakeholder relationships, improving reputational capital, and increasing adaptability in the face of external shocks. DCSR goes beyond traditional CSR by integrating digital ethics, data transparency, and algorithmic accountability into sustainability frameworks. Companies that align their digital strategies with social responsibility goals are more agile in crisis situations (e.g., pandemics, supply chain disruptions), and more capable of complying with evolving EU digital and ESG regulations. This reflects the logic of dynamic capabilities theory, where firms must reconfigure internal and external competencies to sustain performance amid uncertainty.

Research Design and Methodology

This study investigates the transformative role of DCSR and digital integration in shaping environmental performance and economic resilience among European non-financial firms. The analysis spans the period from 2018 to 2024, a critical timeframe characterized by intensified digitalization and sustainability efforts under the European Green Deal, the Digital Decade Policy Programme (2030), and the CSRD. This six-year window captures dynamic shifts in digital and environmental practices, enabling robust panel data analysis to explore temporal dynamics and mitigate endogeneity concerns (Börzel & Risse, 2016; European Commission, 2020a, 2023a).

The empirical foundation of the study rests on a balanced panel dataset comprising 1,652 non-financial firms across 22 EU countries, constructed to facilitate advanced econometric modelling. The dataset draws on comprehensive ESG and financial metrics from established sources, ensuring cross-country comparability and alignment with CSRD standards, which mandate standardized sustainability reporting (Konadu et al., 2022).

A multi-stage data validation process was employed to ensure reliability, addressing potential inconsistencies and ensuring the dataset's suitability for the complex econometric techniques applied in this study. To rigorously address the research questions, a multi-method econometric approach was adopted, integrating three complementary techniques tailored to the panel data structure and the multifaceted nature of the hypotheses.

The first method, the System GMM, is employed to estimate the average effects of DCSR on environmental outcomes, specifically emissions reduction, environmental innovation, and resource efficiency, which correspond to the first three research questions. This approach is particularly suited to the study's objectives due to its ability to address unobserved firm-specific heterogeneity, serial correlation, and reverse causality, which are prevalent in longitudinal studies

of digital transformation and sustainability. By leveraging lagged dependent variables and an instrumental variable, the GMM framework ensures consistent parameter estimates, capturing the dynamic relationships between digital integration and environmental performance in a robust manner (Arellano & Bond, 1991; Blundell & Bond, 1998). The choice of GMM is theoretically grounded in the RBV, which posits that firms' digital capabilities create competitive advantages in sustainability, and its application aligns with the need to control for endogeneity in the context of the EU's heterogeneous regulatory and economic landscape.

To further explore the distributional impacts of DCSR, the second method IV-QRPD is utilized. This approach is designed to capture heterogeneous effects across firms with varying levels of ESG performance, addressing the first three research questions by examining how digital integration benefits low-performing versus high-performing firms. IV-QRPD is particularly appropriate for this study, as it accounts for the non-linear and asymmetric effects of digital transformation, which may differ across the performance distribution. By incorporating an instrumental variable, this method mitigates endogeneity concerns, ensuring that the estimated effects of DCSR are not confounded by reverse causality or unobserved factors. The selection of IV-QRPD reflects its alignment with institutional theory, which highlights the varying impacts of digital and sustainability practices across firms operating under diverse regulatory pressures (Powell, 2016). This approach enhances the study's ability to provide nuanced insights into how digital tools contribute to environmental outcomes in the context of the EU's Green Deal and CSRD frameworks.

For the fourth research question, which examines the complex interplay between DCSR, environmental outcomes, and economic resilience, SEM is employed. This method is ideally suited to model the direct and indirect relationships among these constructs, testing mediation effects, such as the role of environmental outcomes in linking DCSR to resilience, and moderation effects, such as sectoral or country-level differences. SEM's ability to handle latent constructs, such as economic resilience, allows for a comprehensive analysis of how digital sustainability strategies enhance firms' capacity to withstand economic shocks, aligning with the Digital Decade's focus on resilience through technology (Kline, 2015). The SEM framework incorporates hypothesized paths, including the indirect effect of DCSR on resilience through environmental performance, and is validated using goodness-of-fit metrics, such as the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA), to ensure model accuracy and reliability.

The choice of SEM is theoretically supported by stakeholder theory, which emphasizes the role of digital engagement in fostering resilience through sustainable practices. The integrated multi-method approach ensures a robust examination of the theoretical assumptions underpinning the study, addressing endogeneity and heterogeneity, while providing a comprehensive framework for testing the hypotheses across diverse EU firm contexts. To further enhance methodological rigour, robustness checks were conducted, including alternative model specifications, such as two-step GMM and fixed-effects models, to confirm the stability of results.

Diagnostic tests, including the Arellano-Bond test for autocorrelation ($p > 0.05$) and the Sargan-Hansen test for instrument validity ($p > 0.05$), were applied to validate the GMM and IV-QRPD models. For SEM, sensitivity analyses using alternative path specifications ensured the robustness of mediation and moderation effects. These checks, combined with the use of standardized ESG metrics, ensure that the findings are reliable and replicable, thereby meeting the high standards of German academic journals. Theoretically, the methodology is grounded in the convergence of digital transformation and sustainability frameworks, drawing on the RBV to explain how digital capabilities enhance environmental performance and stakeholder theory to elucidate DCSR's role in resilience (Lee & Raschke, 2020). The alignment with EU policies, such as the Green Deal's carbon neutrality targets and the Digital Decade's digitalization goals, ensures policy relevance, while the focus on non-financial firms reflects their critical role in the EU's real economy.

Sample Selection

The selection of an appropriate sample is critical to ensuring the validity and generalizability of findings in this study, which investigates the role of DCSR and digital integration in enhancing environmental performance and economic resilience among European non-financial firms. To achieve a robust and representative sample, a rigorous multi-stage sampling procedure was implemented, designed to align with advanced econometric modelling and relevance to EU policy frameworks, such as the European Green Deal, Digital Decade Policy Programme (2030), and CSRD (European Commission, 2020a, 2023a; Börzel & Risse, 2016).

The sampling process commenced with the identification of an initial population of 2,575 publicly listed firms across major European stock exchanges, including the Frankfurt Stock Exchange (DAX), Euronext (covering Paris, Amsterdam, Brussels, and Lisbon), London Stock Exchange (FTSE), OMX Nordic Exchange (Stockholm, Helsinki, Copenhagen), and the Warsaw Stock Exchange. These exchanges were selected due to their prominence in the EU's financial markets and their requirement for listed firms to comply with stringent ESG disclosure standards, either voluntarily or as mandated by national regulations and the CSRD. The focus on ESG-reported firms ensures that the sample includes companies with standardized, verifiable data on environmental performance, digital integration, and financial metrics,

which are essential for addressing the research questions. The initial population was drawn from the Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases, chosen for their comprehensive coverage, methodological rigor, and alignment with EU sustainability reporting frameworks (Konadu et al., 2022).

To refine the sample and ensure analytical consistency, a series of exclusion criteria were applied. Firms in the financial sector, including banks, insurance companies, and real estate entities classified under NACE Rev. 2 Section K, were excluded due to their distinct regulatory environments and business models. Financial firms operate under frameworks like Basel III, which emphasize capital adequacy and financial risk management, leading to ESG reporting practices that differ significantly from those of non-financial firms. These differences could obscure the relationships between digital transformation and environmental outcomes, introducing structural bias (Konadu et al., 2022). By focusing on non-financial firms, the study ensures a more homogeneous sample, prioritizing industries with direct environmental impacts, such as manufacturing, energy, and consumer goods, which are central to the research questions on emissions reduction, environmental innovation, and resource efficiency.

Additionally, firms lacking complete and continuous data for key variables — DCSR, emissions reduction score, environmental innovation score, resource use score, and resilience indicators (Return on Assets, Altman Z-score, operating margin volatility, and debt-to-equity ratio) — over the 2018–2024 period were excluded. This criterion was critical to maintaining a balanced panel, which is essential for the application of System GMM, IV-QRPD, and SEM (Arellano & Bond, 1991; Kline, 2015). Approximately 512 firms were excluded due to incomplete data, defined as missing more than 20% of observations for any key variable, ensuring data quality and minimizing imputation bias. Firms that entered or exited the market during the study period, such as those affected by mergers, acquisitions, or delisting, were also excluded to avoid survivorship bias and ensure longitudinal consistency. This process eliminated an additional 411 firms. Finally, firms headquartered outside the 27 EU member states were excluded to maintain a focus on the European regulatory and economic context, particularly the Green Deal and CSRD frameworks, resulting in the exclusion of 108 non-EU firms.

The final sample comprises 1,652 non-financial firms, yielding 9,912 firm-year observations (1,652 firms × 6 years) over the 2018–2024 period. These firms operate across nine industries, classified according to NACE Rev. 2: basic materials (e.g., mining, chemicals), consumer goods (e.g., food, beverages), consumer services (e.g., retail, hospitality), energy (e.g., oil, gas, renewables), healthcare (e.g., pharmaceuticals, medical devices), industrials (e.g., manufacturing, construction), technology (e.g., software, hardware), telecommunications, and utilities (e.g., electricity, water). The selection of these industries is theoretically grounded in their relevance to the research questions. High-emission sectors like energy and industrials are critical for studying emissions reduction and resource efficiency (Hypotheses 1 and 3), as they account for a significant share of the EU's carbon footprint and resource consumption (Eurostat, 2024). Technology and telecommunications firms, as leaders in digital adoption, are essential for analyzing DCSR's role in environmental innovation and resilience (Hypotheses 2 and 4). Consumer goods and healthcare industries provide additional diversity, capturing firms with varying degrees of digital transformation and sustainability practices, enabling robust testing of heterogeneous effects (Issa & Hanaysha, 2023).

The sample spans 22 EU countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Spain, Sweden, and Slovakia. These countries were selected based on their representation in the Digital Economy and Society Index (DESI), which measures digital infrastructure, skills, and adoption across the EU (European Commission, 2020a). The inclusion of digitally advanced economies (e.g., Denmark, Finland, Sweden) alongside emerging digital markets (e.g., Romania, Poland) ensures a spectrum of digital maturity levels, critical for examining DCSR's impact across diverse institutional contexts (Hypothesis 4). Five EU countries — Bulgaria, Croatia, Cyprus, Malta, and Slovenia — were excluded due to insufficient ESG data for non-financial firms, as fewer than 10 firms per country met the data completeness threshold. This decision balances sample size with data quality, ensuring robust statistical power.

To ensure data reliability and representativeness, a comprehensive validation and cleaning process was implemented. Data from Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG were harmonized to align variable definitions, with Refinitiv Eikon serving as the primary source due to its CSRD-aligned methodology and comprehensive coverage of environmental metrics (Refinitiv Eikon Datastream, 2022). Thomson Reuters ESG provided complementary disclosure scores, while Bloomberg ESG offered granular data on sustainability governance and digital adaptation. Discrepancies in metrics, such as differing emissions reduction scores, were resolved by prioritizing Refinitiv Eikon's standardized values. Missing data, affecting approximately 7.8% of initial observations, were imputed using multiple imputation by chained equations (MICE), which preserves data structure and minimizes bias compared to listwise deletion (White et al., 2011). Firms with excessive missing data (more than 20% of observations) were excluded, as noted earlier. Outliers, identified using the interquartile range (IQR) method, were winsorized at the 1st and 99th percentiles to address skewness, ensuring compatibility with econometric models sensitive to non-normality, such as GMM and IV-QRPD.

The representativeness of the sample was verified by comparing its industry distribution to the EU's economic

output, as reported by Eurostat (2024). The sample closely mirrors the EU's non-financial economy, with industrials (27.5%), consumer goods (18.2%), and technology (14.8%) being the largest sectors, reflecting their economic significance. Firm size distribution, measured by the natural logarithm of total assets, ranges from small enterprises (log assets < 10) to large multinationals (log assets > 18), ensuring coverage of diverse firm profiles. To address potential biases, robustness checks were conducted. A subsample analysis excluding firms with imputed data (n = 136) confirmed consistent industry and country distributions. Additionally, the sample's country representation was cross validated against DESI scores, confirming coverage of high (e.g., Finland, DESI score 72.3), medium (e.g., Portugal, DESI score 51.8), and low (e.g., Romania, DESI score 41.2) digital maturity contexts.

The sample's composition is theoretically justified by its alignment with the study's objectives. Non-financial firms were prioritized because their operations directly influence environmental outcomes, unlike financial firms, whose ESG impacts are often indirect (Konadu et al., 2022). The industry mix captures sectors with high environmental stakes (e.g., energy, industrials) and digital leaders (e.g., technology, telecommunications), enabling robust testing of DCSR's effects on emissions, innovation, and efficiency (Hypotheses 1–3). The country selection reflects the EU's heterogeneous digital and regulatory landscapes, critical for analyzing resilience under varying institutional conditions (Hypothesis 4). By focusing on ESG-reported firms, the sample ensures compliance with CSRD standards, enhancing policy relevance and generalizability to the EU's real economy.

This comprehensive sampling approach provides a robust empirical foundation for analyzing the interplay of digital transformation, environmental sustainability, and economic resilience, ensuring methodological rigor and alignment with the study's objectives and German academic standards.

Data Collection Process

The data collection process was meticulously designed to construct a robust and comprehensive dataset for analyzing the interplay of DCSR, environmental sustainability, and economic resilience among European non-financial firms. Spanning the period from 2018 to 2024, the dataset captures a transformative era in the European Union, characterized by accelerated digitalization and sustainability initiatives driven by the European Green Deal, the Digital Decade Policy Programme (2030), and the CSRD (European Commission, 2020a, 2023a).

The dataset was compiled from three leading ESG data providers — Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG — selected for their authoritative coverage, methodological robustness, and relevance to the EU's sustainability and digital transformation frameworks. Refinitiv Eikon, integrating the legacy of ASSET4, served as the primary source due to its extensive and standardized metrics on environmental, social, and governance performance, which are closely aligned with CSRD reporting requirements. Specifically, Refinitiv Eikon provided detailed indicators for the study's dependent variables, including the emissions reduction score, which quantifies a firm's ability to minimize carbon and industrial emissions through operational efficiencies; the environmental innovation score, which measures the development and adoption of eco-friendly technologies; and the resource use score, which evaluates efficiency in material, energy, and water consumption (Refinitiv Eikon Datastream, 2022). These metrics directly address Hypotheses 1–3, enabling precise analysis of DCSR's impact on environmental outcomes. Additionally, Refinitiv Eikon supplied financial metrics, such as Return on Assets (ROA), Altman Z-score, operating margin volatility, and debt-to-equity ratio, used to construct the latent economic resilience variable for Hypothesis 4.

Thomson Reuters ESG complemented Refinitiv Eikon by providing robust disclosure scores, which assess the transparency and quality of firms' ESG reporting. These scores were critical for evaluating the DCSR component related to digital platforms for stakeholder engagement and transparency, a key explanatory variable in the study. Thomson Reuters ESG also offered longitudinal consistency, ensuring that metrics remained comparable across the 2018–2024 period, which was essential for tracking temporal trends in digital transformation and sustainability practices. Bloomberg ESG enhanced the dataset by providing granular data on sustainability governance, including board-level oversight of ESG strategies, and digital adaptation measures, such as investments in IoT and AI for environmental management. These metrics enriched the DCSR index, particularly its component on green digital technologies, and supported the analysis of sectoral variations in digital adoption (Hypothesis 3).

The data extraction process involved a systematic approach to ensure accuracy and comprehensiveness. Access to the databases was secured through institutional subscriptions to Refinitiv Eikon's Datastream platform, Thomson Reuters ESG's online portal, and Bloomberg ESG's terminal interface. Data queries were executed using structured query language (SQL) for Refinitiv Eikon and Thomson Reuters ESG, allowing the precise extraction of variables by firm, year, and industry. Bloomberg ESG data were retrieved through a combination of automated API queries and manual verification to ensure accuracy, given the platform's complex interface. Variables were selected based on their alignment with the research questions: environmental performance metrics (e.g., emissions reduction, resource efficiency) for Hypotheses 1–3, financial stability indicators for Hypothesis 4, and digital integration measures (e.g., digital platform usage, green

technology investments) for the DCSR index. To capture the regulatory context, country-level data from the DESI were integrated, providing insights into digital maturity variations across the 22 EU countries (European Commission, 2020a).

A rigorous quality assurance protocol was implemented to ensure data reliability. Initial data extracts were subjected to cross-source validation, where identical variables (e.g., emissions reduction scores) were compared across Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG to identify inconsistencies. For instance, differences in emissions data due to varying calculation methodologies were resolved by adopting Refinitiv Eikon's standardized values, which adhere to EU carbon accounting standards. Temporal consistency was verified by checking for anomalies in year-to-year variations, such as sudden spikes in ESG scores, which could indicate reporting errors. Approximately 5.2% of observations required manual correction due to transcription errors or inconsistent units (e.g., emissions reported in metric tons vs. kilograms). To ensure geographical accuracy, firm headquarters were cross-referenced with stock exchange listings and EU registries, confirming that all firms were headquartered in one of the 22 selected EU countries.

The data collection process also addressed challenges related to data integration across the three sources. Refinitiv Eikon's comprehensive coverage of environmental metrics was prioritized for primary variables, while Thomson Reuters ESG and Bloomberg ESG provided supplementary data to fill gaps, particularly for smaller firms or less digitally mature countries. A custom Python script was developed to automate data merging, using firm identifiers (e.g., ISIN codes) to align records across databases. This script also flagged discrepancies for manual review, ensuring seamless integration. To capture the dynamic nature of digital transformation, data collection prioritized time-varying variables, such as annual changes in digital platform adoption or green technology investments, which were critical for longitudinal analyses like System GMM and IV-QRPD (Arellano & Bond, 1991; Powell, 2016).

The temporal scope of 2018–2024 was strategically chosen to align with significant EU policy developments. The period begins with the EU's increased focus on sustainability through the Green Deal (2019) and extends to the implementation of CSRD (2024), capturing a transformative phase in digital and environmental practices. This timeframe also coincides with the Digital Decade's push for widespread digital adoption, providing a rich context for analyzing DCSR's evolution (European Commission, 2023a). Geographically, the dataset covers firms in 22 EU countries, selected for their representation in DESI and availability of ESG data. This scope ensures a diverse sample, encompassing digitally advanced nations (e.g., Denmark, with a DESI score of 72.3) and emerging markets (e.g., Romania, DESI score 41.2), facilitating analysis of institutional heterogeneity (Hypothesis 4).

To mitigate potential biases, several robustness checks were conducted. The dataset's completeness was verified by comparing the number of observations per firm (six years) across sources, ensuring no gaps in longitudinal coverage. A subsample analysis of firms with high-frequency ESG reporting (e.g., quarterly disclosures) confirmed consistency with annual data, validating the dataset's reliability. Additionally, the dataset's representativeness was assessed by comparing industry weights to Eurostat's (2024) economic output data, confirming alignment with the EU's non-financial economy (e.g., industrials: 27.5%, technology: 14.8%). These checks ensure that the dataset is robust and suitable for addressing the study's objectives.

Theoretically, the data collection process is grounded in the need to capture the multidimensional nature of DCSR, and its impact on sustainability and resilience. The selection of Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG ensures access to standardized, high-quality data that align with the CSRD's emphasis on transparent ESG reporting, enabling precise measurement of environmental outcomes (Hypotheses 1–3) and resilience (Hypothesis 4). The inclusion of digital adaptation metrics reflects the Digital Decade's focus on technology-driven transformation, while the financial indicators support the analysis of economic resilience in the context of digital and environmental strategies.

Variable Measurement and Operationalization

This subsection provides a comprehensive description of the dependent, explanatory, moderating, and control variables, emphasizing methodological transparency, validation to examine the effects of DCSR on corporate sustainability, environmental innovation, and economic resilience. (Börzel & Risse, 2016).

The dependent variables are structured to directly address the research hypotheses, drawing on standardized metrics from the environmental pillar of the ESG framework to capture sustainability outcomes and a latent construct to measure economic resilience. For the first research question, which examines the reduction of carbon and industrial emissions, the emissions reduction score is employed as the primary dependent variable. This score, derived from Refinitiv Eikon's environmental pillar, quantifies a firm's ability to minimize emissions through operational efficiencies, process optimizations, and the adoption of low-carbon technologies. It is calculated as a composite index, aggregating firm-level data on carbon dioxide (CO2) emissions, volatile organic compounds (VOCs), and other industrial pollutants, normalized on a 0–100 scale to ensure comparability across firms and industries (Refinitiv Eikon Datastream, 2022). The score's relevance lies in its alignment with the EU's carbon neutrality goals under the Green Deal, making it an ideal measure for assessing digital technologies' impact on emissions reduction (Hypothesis 1) (Serafeim, 2015).

For the second research question, focusing on environmentally oriented innovations, the environmental innovation score serves as the dependent variable. This metric, also sourced from Refinitiv Eikon, evaluates a firm's development and adoption of eco-friendly technologies, such as renewable energy systems, sustainable materials, and green product designs. The score is constructed based on firm-level investments in research and development (R&D) for environmental technologies, the number of green patents filed, and the integration of sustainable processes into production cycles, normalized to a 0–100 scale (Konadu et al., 2022). This variable is particularly suited to Hypothesis 2, as it captures the innovative outcomes of digital transformation, such as the use of AI or IoT to develop sustainable solutions, aligning with the Digital Decade's emphasis on technology-driven innovation.

To address the third research question, which explores resource utilization efficiency, the resource use score is utilized. This indicator, derived from Refinitiv Eikon, measures a firm's efficiency in managing material, energy, and water resources, with a focus on supply chain optimizations and waste reduction strategies. It aggregates data on energy consumption (measured in gigajoules), water usage (in cubic metres), and material waste (in metric tons), adjusted for firm size and industry norms, and normalized to a 0–100 scale (Issa & Hanaysha, 2023). The score's design reflects the EU's circular economy objectives, making it a robust measure for assessing how digital tools, such as smart supply chain systems, enhance resource efficiency (Hypothesis 3).

For the fourth research question, which examines DCSR's contribution to economic resilience, a latent construct of corporate resilience is operationalized within a SEM framework. Economic resilience is defined as a firm's capacity to maintain financial stability and adapt to external shocks, such as economic downturns or regulatory changes. This construct is measured using four observed indicators: Return on Assets (ROA), which reflects profitability and operational efficiency; the Altman Z-score, which assesses bankruptcy risk and solvency; operating margin volatility, which captures sensitivity to market fluctuations; and the debt-to-equity ratio, which indicates financial flexibility and risk exposure. These indicators, sourced from Refinitiv Eikon's financial database, are standardized to ensure comparability and integrated into the SEM model to estimate both direct and indirect effects of DCSR on resilience (Kline, 2015). The use of a latent construct allows for a nuanced analysis of resilience, capturing its multidimensional nature and aligning with Hypothesis 4's focus on economic security in the context of digital transformation.

The primary explanatory variable, DCSR, is operationalized as a composite index that captures a firm's integration of digital technologies into its corporate social responsibility strategies, reflecting the convergence of digital transformation and sustainability. The index is constructed from three key components: the use of digital platforms for ESG disclosure and transparency, such as online sustainability reports and blockchain-based reporting systems; investments in green digital technologies, including IoT-enabled energy management systems and AI-driven environmental monitoring; and technology-enabled stakeholder engagement, such as social media campaigns and digital tools for stakeholder dialogue. These components are aggregated using principal component analysis (PCA), which assigns weights based on their contribution to the overall variance, ensuring a robust and non-collinear measure (Lee & Raschke, 2020). The PCA process was validated using Kaiser-Meyer-Olkin (KMO) tests (KMO = 0.82, indicating sampling adequacy) and Bartlett's test of sphericity ($p < 0.001$), confirming the suitability of the components for index construction. The resulting DCSR index, normalized to a 0–100 scale, provides a comprehensive measure of digital sustainability strategies, directly addressing all four research questions.

To account for sectoral and institutional heterogeneity, which is critical for Hypothesis 3, moderating variables are included. Sectoral effects are captured using industry classifications based on NACE Rev. 2, which categorize firms into nine industries: basic materials, consumer goods, consumer services, energy, healthcare, industrials, technology, telecommunications, and utilities. These classifications enable the analysis of how DCSR's effectiveness varies across high-emission sectors (e.g., energy, industrials) and digitally advanced sectors (e.g., technology, telecommunications). Country-level digital maturity is measured using the DESI, which provides a composite score of digital infrastructure, skills, and adoption for each of the 22 EU countries in the sample (European Commission, 2020a). Interaction terms between DCSR and these moderating variables are included to test whether sectoral or institutional contexts amplify or attenuate DCSR's impact on resource efficiency.

Control variables are incorporated to isolate the effects of DCSR and ensure robust estimation. Firm size, measured as the natural logarithm of total assets, accounts for scale effects, as larger firms may have greater resources for digital and sustainability initiatives (Marsat et al., 2021). Financial performance is captured using ROA and the market-to-book ratio, which reflect profitability and market valuation, respectively, influencing a firm's capacity to invest in DCSR. Board characteristics, including the number of board members and the percentage of independent directors, are included to control for governance structures that may shape sustainability strategies (Yarram & Adapa, 2021). To account for unobserved heterogeneity, industry fixed effects (based on NACE Rev. 2 classifications), country fixed effects (based on EU country codes), and year fixed effects (2018–2024) are included, capturing sector-specific, country-specific, and temporal variations (Nguyen et al., 2015).

To address potential endogeneity, particularly the bidirectional relationship between DCSR and environmental outcomes, ISO 14000 certification is employed as an instrumental variable. This binary variable, coded as 1 for firms with a valid ISO 14000 certification in a given year and 0 otherwise, reflects the adoption of formal environmental management systems, which signals a commitment to structured environmental governance (Delmas & Montiel, 2008). The instrument's exogeneity is supported by its independence from firm-level ESG outcomes, as certification is driven by external standards rather than endogenous firm performance. To ensure robustness, alternative instruments, such as Environmental Management System (EMS) adoption beyond ISO 14000, were tested, yielding consistent results. The validity of the instrument was confirmed using the Sargan-Hansen test for overidentification ($p > 0.05$), ensuring that it meets the exclusion restriction.

The measurement framework was subjected to rigorous validation to ensure reliability and robustness. For the environmental pillar scores, internal consistency was assessed using Cronbach's alpha ($\alpha = 0.87$ for emissions reduction, 0.84 for environmental innovation, 0.89 for resource use), indicating high reliability. The economic resilience construct was validated within the SEM framework using confirmatory factor analysis (CFA), with factor loadings for the four indicators (ROA, Altman Z-score, operating margin volatility, debt-to-equity ratio) exceeding 0.7, confirming convergent validity. Discriminant validity was verified by ensuring low correlations between the resilience construct and other variables ($r < 0.3$). Sensitivity analyses were conducted by re-estimating variable definitions using alternative data sources (e.g., Bloomberg ESG for environmental scores), confirming consistency. These validation steps ensure that the variables are robust, reliable, and suitable for the econometric models employed, including System GMM, IV-QRPD, and SEM.

Theoretically, the variable operationalization is grounded in the digital transformation and sustainability literature. The environmental pillar scores align with the RBV, which posits that firms leverage digital capabilities to enhance environmental performance (Konadu et al., 2022). The DCSR index draws on stakeholder theory, emphasizing technology-enabled engagement as a driver of sustainability and resilience (Lee & Raschke, 2020). The resilience construct is informed by organizational resilience theory, which highlights financial stability and adaptability as key to navigating external shocks (Kline, 2015). The inclusion of DESI-based country effects reflects institutional theory, accounting for regulatory and digital maturity variations across the EU (European Commission, 2020a). This framework ensures that the variables are theoretically robust and aligned with the EU's policy priorities, providing a high-quality foundation for analyzing the interplay of digital transformation, sustainability, and resilience.

Model Specification

To rigorously examine the influence of DCSR and digital integration on environmental sustainability and economic resilience in European non-financial firms, this study employs a sophisticated econometric framework tailored to address the four research questions: the role of digital technologies in reducing carbon and industrial emissions, the linkage between digital transformation and environmentally oriented innovations, the enhancement of resource utilization efficiency through digital tools, and the contribution of DCSR to economic resilience and security. The analysis confronts significant endogeneity challenges, including reverse causality, omitted variable bias, and unobserved firm-level heterogeneity, which are prevalent in empirical studies of digital transformation and sustainability. For instance, firms with strong environmental performance may be more likely to adopt digital innovations, potentially confounding the causal relationship between DCSR and sustainability outcomes (Aouadi & Marsat, 2016; Habib & Bhuiyan, 2017). To ensure robust and reliable estimation, the model specification integrates a multi-method approach, combining dynamic panel data techniques and structural modelling, grounded in theoretical frameworks and aligned with European Union policy initiatives, such as the European Green Deal, Digital Decade Policy Programme (2030), and CSRD (European Commission, 2020a, 2023a).

The econometric analysis begins with a series of diagnostic checks to validate model assumptions and confirm the presence of endogeneity, ensuring the appropriateness of the chosen methods. The Wooldridge test for autocorrelation was conducted, revealing significant serial correlation ($p < 0.01$), indicating that past values of environmental outcomes influence current performance, necessitating dynamic modelling. The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity confirmed non-constant variance ($p < 0.05$), supporting the use of robust standard errors. Additionally, the Wooldridge test for strict exogeneity rejected the null hypothesis ($p < 0.01$), confirming endogeneity due to bidirectional relationships between DCSR and sustainability outcomes, as well as unobserved firm-specific effects (Wooldridge, 2010; Wintoki et al., 2012). These findings underscore the need for advanced econometric techniques to address endogeneity and ensure causal inference, aligning with the methodological rigor required by German academic standards (Börzel & Risse, 2016).

For the first three research questions, which focus on the effects of DCSR on emissions reduction, environmental innovation, and resource efficiency, the two-step System GMM is employed. This method is particularly suited to the panel data structure, as it controls for unobserved firm-specific heterogeneity, serial correlation, and reverse causality by using lagged dependent variables and external instruments. The GMM model is specified as follows:

$$Y_i, t \ = \ \alpha + \ \beta_1 Y_i, t - 1 \ + \ \beta_2 \ DCSR_i, t \ + \ \beta_3 X_i, t \ + \ \delta_i + \ \gamma_t + \ \epsilon_i, t \qquad (1)$$

where $Y_{i,t}$ - represents the dependent variable emissions reduction score, environmental innovation score, or resource use score for firm (i) at time (t), $Y_{i,t-1}$ is the lagged dependent variable capturing dynamic effects, $DCSR_{i,t}$ is the composite DCSR index, $X_{i,t}$ is a vector of control variables firm size, financial performance, board characteristics, industry, country, and year fixed effects, denotes firm-specific fixed effects, represents year fixed effects, and is the error term. ISO 14000 certification serves as the primary instrument, as it reflects structured environmental governance exogenous to firm-level ESG outcomes (Delmas & Montiel, 2008). The two-step GMM estimator, as developed by Arellano and Bond (1991) and refined by Blundell and Bond (1998), uses robust standard errors to address heteroskedasticity and includes the Arellano-Bond test for autocorrelation (AR(2), $p > 0.05$) and the Sargan-Hansen test for instrument validity ($p > 0.05$) to ensure model reliability. This approach is theoretically grounded in the RBV, which posits that digital capabilities enhance environmental performance, and aligns with the Green Deal's emphasis on reducing emissions and improving resource efficiency (Konadu et al., 2022).

To capture heterogeneity in DCSR's effects across firms with varying levels of ESG performance, IV-QRPD is employed, addressing the distributional impacts relevant to the first three research questions. This method extends the GMM framework by estimating the effects of DCSR at different quantiles of the dependent variables (e.g., Q10, Q25, Q50, Q75, Q90), allowing for a nuanced understanding of how digital transformation benefits low-performing versus high-performing firms. The IV-QRPD model is specified as:

$$\mathrm{Q}\tau(\mathrm{Yi}, \mathrm{t} \mid \ \mathrm{DCSR}i, t, X\mathrm{i}, \mathrm{t}) \ = \ \alpha\tau \ + \ \beta\tau \mathrm{DCSR}i, t \ + \ \gamma\tau \mathrm{Xi}, \mathrm{t} + \ \eta \mathrm{i}, \mathrm{t} \quad (2)$$

where is the conditional quantile of the dependent variable at quantile , $DCSR_{i,t}$ is instrumented using ISO 14000 certification, $X_{i,t}$ includes control variables, and is the error term. The IV-QRPD framework, based on Powell's (2016) methodology, accounts for non-additive fixed effects and endogeneity, ensuring robust estimation across the ESG performance distribution. This approach is particularly relevant for Hypothesis 3, as it examines how sectoral and country-level digital maturity, measured via interaction terms with NACE Rev. 2 classifications and DESI scores, moderates DCSR's impact on resource efficiency (European Commission, 2020a). The model's validity is confirmed using quantile-specific diagnostic tests, such as the Wald test for instrument strength ($p < 0.01$), ensuring reliable inference.

For the fourth research question, which explores the complex interplay between DCSR, environmental outcomes, and economic resilience, SEM is utilized. SEM is ideally suited to model the direct and indirect relationships among these constructs, testing mediation effects (e.g., environmental outcomes mediating DCSR's impact on resilience) and moderation effects (e.g., sectoral or country-level differences). The SEM framework is specified as follows:

$$Resiliencei, t = \gamma 1 DCSRi, t + \gamma 2 EnvOutcomesi, t + \gamma 3 Xi, t + \zeta i, t \qquad (3)$$

$$EnvOutcomesi, t = \delta 1 DCSRi, t + \delta 2 Xi, t + \nu i, t \qquad (4)$$

where is the latent construct of economic resilience measured via ROA, Altman Z-score, operating margin volatility, and debt-to-equity ratio, represents environmental outcomes (emissions reduction, innovation, or resource efficiency), is the DCSR index, $X_{i,t}$ includes control and moderating variables, and and are error terms. The structural paths hypothesize that DCSR directly influences resilience and indirectly affects it through environmental outcomes, with mediation tested using the Sobel test ($p < 0.05$). Moderation effects are modelled via interaction terms between DCSR and sectoral or country-level variables. The SEM model is validated using goodness-of-fit metrics, including the Comparative Fit Index (CFI > 0.9), Root Mean Square Error of Approximation (RMSEA < 0.08), and Standardized Root Mean Square Residual (SRMR < 0.08), ensuring model fit and reliability (Kline, 2015). This approach is grounded in stakeholder theory, which emphasizes digital engagement's role in fostering resilience through sustainable practices, and aligns with the Digital Decade's focus on technology-driven economic stability (Lee & Raschke, 2020).

To ensure robustness, several sensitivity analyses were conducted. Alternative GMM specifications, such as one-step GMM and fixed-effects models, were tested, yielding consistent results. For IV-QRPD, alternative quantiles (e.g., Q15, Q85) were estimated to confirm stability across the distribution. In the SEM framework, alternative path specifications, such as direct effects of DCSR on resilience without mediation, were tested to validate the hypothesized structure. The use of an alternative instrument, Environmental Management System (EMS) adoption, further confirmed the robustness of the ISO 14000 instrument. These checks, combined with rigorous diagnostic tests, ensure that the models are

reliable and replicable, meeting the high standards of German academic journals.

The model specification is theoretically grounded in the convergence of digital transformation and sustainability frameworks. The GMM and IV-QRPD models draw on the RBV, which posits that digital capabilities enhance environmental performance, while the SEM framework leverages stakeholder theory to elucidate DCSR's role in resilience (Konadu et al., 2022; Lee & Raschke, 2020). The alignment with EU policies, such as the Green Deal's carbon neutrality targets and the CSRD's reporting standards, ensures policy relevance, while the focus on non-financial firms reflects their critical role in the EU's real economy. This comprehensive econometric framework provides a robust foundation for analyzing the dynamic interplay of DCSR, environmental sustainability, and economic resilience, contributing to both academic discourse and policy development in the European context.

Empirical Results

Descriptive Statistics and Correlation Analysis

The analysis leverages a balanced panel dataset comprising 9,912 firm-year observations, derived from 1,652 non-financial firms operating across 22 EU countries over the period from 2018 to 2024. This timeframe captures a transformative era marked by intensified digitalization and sustainability initiatives under the European Green Deal, Digital Decade Policy Programme (2030), and CSRD, ensuring alignment with EU policy frameworks (European Commission, 2020a, 2023a; Börzel & Risse, 2016).

Descriptive statistics provide critical insights into the distribution and variability of key variables, informing the suitability of the econometric models specified in Equations (1) through (4). The DCSR index, which captures the adoption of digital technologies in sustainability strategies, exhibits a mean value of 43.16 (on a 0–100 scale), with a standard deviation of 15.82, indicating moderate but heterogeneous adoption of digital platforms, green technologies, and stakeholder engagement tools across European firms. Sectoral analysis reveals higher DCSR scores in technology and telecommunications industries (mean = 58.24) compared to energy and industrials (mean = 34.67), reflecting varying levels of digital maturity, consistent with DESI trends (European Commission, 2020a). The emissions reduction score, addressing the first research question, has a mean of 50.67 (standard deviation = 18.45), suggesting that, on average, firms implement approximately half of the expected emission-reducing practices, with greater progress in high-emission sectors like energy (mean = 62.31). The environmental innovation score, relevant to the second research question, averages 28.06 (standard deviation = 12.73), indicating emerging but limited eco-innovation capabilities, particularly in consumer goods and healthcare sectors (mean = 35.12). The resource use score, central to the third research question, stands at a mean of 47.66 (standard deviation = 16.94), reflecting partial progress in optimizing material and energy inputs, with utilities showing stronger performance (mean = 54.88). Economic resilience, a latent construct for the fourth research question, has a mean score of 62.40 (standard deviation = 14.27), suggesting considerable variation in firms' financial stability and adaptability, with technology firms exhibiting higher resilience (mean = 68.75) compared to basic materials (mean = 55.43).

Examination of the variables' distributional properties reveals significant deviations from normality, supporting the use of advanced econometric techniques. The emissions reduction score displays positive skewness (0.65) and kurtosis (6.85), indicating a right-tailed distribution with some firms achieving exceptionally high performance. Environmental innovation shows the greatest departure from normality, with skewness of 0.72 and kurtosis of 7.33, reflecting a concentration of firms with limited eco-innovation capabilities and a few outliers with advanced practices. The resource use score exhibits skewness of 0.58 and kurtosis of 6.47, while economic resilience has skewness of 0.52 and kurtosis of 6.92, suggesting non-normal distributions across all measures. These characteristics were confirmed by Shapiro–Wilk tests, which rejected the null hypothesis of normality at the 1% significance level for all variables ($p < 0.01$) (Razali & Wah, 2011). The non-normal distributions validate the application of quantile regression methods, such as the IV-QRPD specified in Equation (2), to capture heterogeneous effects across firms with varying sustainability performance. Additionally, the presence of dynamic relationships and potential endogeneity, particularly in the bidirectional relationship between DCSR and environmental outcomes, supports the use of the two-step System GMM estimator, as outlined in Equation (1), to ensure consistent parameter estimates (Arellano & Bond, 1991; Blundell & Bond, 1998).

Correlation analysis further informs the empirical strategy by assessing relationships among variables. The Pearson correlation matrix reveals pairwise correlations ranging from –0.10 to 0.49, well below the 0.8 threshold for multicollinearity, ensuring that the variables are sufficiently independent for robust modelling (Gujarati & Porter, 2009). The strongest correlation is observed between economic resilience and Return on Assets (ROA) ($r = 0.49$, $p < 0.01$), consistent with theoretical expectations that profitability enhances financial stability. DCSR exhibits moderate positive correlations with emissions reduction ($r = 0.38$, $p < 0.01$), environmental innovation ($r = 0.42$, $p < 0.01$), and resource use ($r = 0.35$,

$p < 0.01$), supporting the hypothesized positive relationships in Hypotheses 1–3. The correlation between DCSR and economic resilience ($r = 0.40$, $p < 0.01$) suggests a potential direct effect, which is further explored through mediation in the SEM framework specified in Equations (3) and (4). Variance Inflation Factors (VIFs) for all variables are below 2 (maximum VIF = 1.85), confirming the absence of multicollinearity and reinforcing the robustness of the model inputs.

To ensure the dataset's reliability, additional diagnostic checks were conducted. Jarque-Bera tests corroborated the non-normality findings ($p < 0.01$), while Kolmogorov-Smirnov tests confirmed distributional differences across industries and countries ($p < 0.05$), highlighting the need for IV-QRPD to address heterogeneity. Sensitivity analyses, such as excluding firms in less digitally mature countries (e.g., Romania, DESI score = 41.2), yielded consistent descriptive statistics, confirming the dataset's stability. These diagnostic results validate the use of multivariate approaches, with the temporal depth and firm-level structure providing a solid foundation for subsequent analyses. The GMM model, as specified in Equation (1), is well-suited to address dynamic relationships and endogeneity, while the IV-QRPD model in Equation (2) captures distributional effects across firms with varying ESG performance. The SEM framework, outlined in Equations (3) and (4), enables a nuanced analysis of direct and indirect effects, particularly the mediating role of environmental outcomes in the relationship between DCSR and resilience, aligning with the Digital Decade's focus on technology-driven stability (Kline, 2015; European Commission, 2020a).

Theoretically, the descriptive and correlation analyses are grounded in the RBV, which posits that digital capabilities enhance environmental performance, and stakeholder theory, which emphasizes DCSR's role in fostering resilience through sustainable practices (Konadu et al., 2022; Lee & Raschke, 2020). The moderate DCSR adoption and varied sustainability outcomes reflect the EU's diverse digital and regulatory landscape, as captured by DESI, and underscore the relevance of the Green Deal and CSRD in shaping firm behaviour. These findings provide a robust empirical foundation for testing Hypotheses 1–3, which focus on DCSR's direct effects on emissions reduction, innovation, and efficiency, and Hypothesis 4, which examines resilience through mediation, using the complementary modelling strategies outlined in the model specification. Subsequent sections will present detailed empirical results, leveraging these statistical insights to uncover both average and distributional effects in the context of the European Green Deal and ongoing economic uncertainty.

As presented in Table 1, the descriptive statistics — drawn from 9,912 firm-year observations covering 1,652 non-financial firms across 22 EU countries between 2018 and 2024 — highlight several important trends in the adoption of digital sustainability practices and associated environmental outcomes. The average DCSR index stands at 43.16 (SD = 15.82) on a normalized 0–100 scale, indicating that while digital integration into sustainability strategies is present in many firms, it remains at a moderate level overall. This average conceals substantial variation across industries and countries. Technology-intensive sectors such as ICT and telecommunications report DCSR means above 55, reflecting greater investments in AI, IoT, and platform-based stakeholder engagement. In contrast, traditional high-impact sectors such as basic materials, industrial manufacturing, and energy exhibit significantly lower DCSR scores, often below 35, which suggests structural or institutional barriers to digital sustainability implementation.

Environmental performance metrics likewise show notable divergence. The emissions reduction score has a mean of 50.67 (SD = 18.45), reflecting a moderate degree of decarbonization progress across firms, but with wide dispersion. High-emission sectors like energy and heavy industry show higher mean scores (up to 62.3), largely due to EU-level compliance mandates and public pressure, while consumer goods and services sectors report lower scores, raising concerns about decarbonization asymmetry. The environmental innovation score — capturing green R&D, patenting activity, and eco-design integration — averages at a comparatively low 28.06 (SD = 12.73), revealing that eco-innovation remains underdeveloped in many firms, particularly in countries with lower DESI scores. This suggests a structural innovation gap, where digital technologies have not yet been fully leveraged for sustainability transformation.

The resource use efficiency score (mean = 47.66, SD = 16.94) shows moderate improvement, with notable gains in logistics, smart inventory, and energy monitoring among firms in the retail, utilities, and industrials sectors. However, large interquartile spreads indicate inconsistency in implementation, often linked to firm size, supply chain complexity, or lack of access to digital infrastructure.

Economic resilience — measured as a latent construct combining Return on Assets, Altman Z-score, operating margin volatility, and debt-to-equity ratio — has a mean score of 62.40 (SD = 14.27). Firms in the technology and healthcare sectors demonstrate above-average resilience, partly due to higher digital adaptability and more robust ESG governance structures. In contrast, firms in extractive or energy-intensive industries tend to have lower resilience scores, often correlated with regulatory uncertainty and higher exposure to market shocks.

The distributions of all dependent variables deviate from normality, as confirmed by Shapiro–Wilk tests ($p < 0.01$), underscoring the appropriateness of adopting quantile-based approaches. These findings validate the choice of the Instrumental Variable Quantile Regression for Panel Data (IV-QRPD) model specified in Equation (2), which enables the analysis to uncover heterogeneous effects of DCSR across firms at different performance levels. This is particularly

important given the observed skewness in environmental innovation and resource use indicators, which suggest that digital sustainability strategies may benefit top-performing firms more than those at the lower end of the distribution. Thus, modelling effects across quantiles provides a more granular understanding of how digital transformation contributes to environmental and economic outcomes in diverse firm contexts.

Table 1. Descriptive Statistics of Key Variables (9,912 firm-year observations, 2018–2024)

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Variable	Mean	Standard Deviation	Skewness	Kurtosis	Industry-Specific Mean (Selected)
DCSR Index	43.16	15.82	0.60	6.50	Technology: 58.24, Energy: 34.67
Emissions Reduction Score	50.67	18.45	0.65	6.85	Energy: 62.31
Environmental Innovation Score	28.06	12.73	0.72	7.33	Consumer Goods/Healthcare: 35.12
Resource Use Score	47.66	16.94	0.58	6.47	Utilities: 54.88
Economic Resilience Score	62.40	14.27	0.52	6.92	Technology: 68.75, Basic Materials: 55.43

Table 2 presents the Pearson correlation matrix, offering initial insights into the relationships between key variables related to digital responsibility, environmental performance, and firm-level resilience. The analysis reveals moderate and statistically significant positive correlations between the DCSR index and each of the environmental performance indicators — namely emissions reduction ($r = 0.42$, $p < 0.01$), environmental innovation ($r = 0.38$, $p < 0.01$), and resource use efficiency ($r = 0.41$, $p < 0.01$). These coefficients suggest that firms which more actively integrate digital tools — such as AI-driven monitoring, blockchain transparency, and IoT-enabled process optimization — into their CSR strategies are also more likely to report stronger sustainability performance across multiple domains. This is consistent with Hypotheses 1 through 3, which posit that digital integration is positively associated with reduced emissions, greater innovation in environmental solutions, and more efficient use of energy and materials.

Interestingly, the correlation between DCSR and environmental innovation, while significant, is slightly weaker than that observed for emissions reduction and resource efficiency. This suggests that while digital responsibility practices are becoming increasingly embedded in operational and reporting processes, their diffusion into eco-innovation — such as green R&D, sustainable product design, or patenting activity — may still be limited or lagging in some sectors. This asymmetry may reflect structural challenges, such as funding gaps for green innovation, or the absence of institutional incentives for long-term ecological investment.

The matrix also reveals a stronger positive correlation between economic resilience (the latent construct) and Return on Assets (ROA) ($r = 0.49$, $p < 0.01$), indicating that profitability remains a key component of a firm's capacity to withstand external shocks and volatility. High resilience scores are also moderately associated with DCSR ($r = 0.36$, $p < 0.01$), suggesting that digital responsibility practices may contribute indirectly to economic robustness — possibly via enhanced stakeholder trust, regulatory compliance, and adaptive capability. These findings align with Hypothesis 4 and are theoretically grounded in stakeholder theory and the resource-based view (RBV), which together assert that intangible assets such as reputation, transparency, and adaptive use of technology serve as strategic resources in dynamic environments (Barney, 2000; Lee & Raschke, 2020).

Importantly, the Variance Inflation Factor (VIF) diagnostics confirm the absence of multicollinearity among the explanatory variables, with all VIF scores well below the conventional threshold of 5 and none exceeding 2. This statistical validation enhances confidence in the regression models used in subsequent analysis, particularly the two-step System GMM model specified in Equation (1) and the SEM framework used to test Equations (3) and (4). The lack of multicollinearity ensures that parameter estimates are stable, interpretable, and not distorted by overlapping explanatory power between predictors — a common concern in empirical sustainability research that incorporates multiple latent constructs.

Taken together, these correlation patterns and diagnostic indicators provide robust preliminary support for the proposed theoretical framework and model specification. They also validate the suitability of the dataset for analyzing the strategic interplay between digital transformation and sustainability within the EU's regulatory context — particularly under the European Green Deal, the Digital Decade Policy Programme, and the CSRD. These results further underscore the importance of adopting multi-method approaches — such as GMM, IV-QRPD, and SEM — to capture both the direct and indirect pathways through which DCSR impacts environmental and economic outcomes across diverse firm profiles and institutional settings.

Table 2. Pearson Correlation Matrix and Variance Inflation Factors (VIFs)

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Variable	DCSR Index	Emissions Reduction	Environmental Innovation	Resource Use	Economic Resilience	ROA	VIF
DCSR Index	1.00	0.38***	0.42***	0.35***	0.40***	0.30***	1.65
Emissions Reduction Score		1.00	0.25***	0.32***	0.28***	0.20***	1.72
Environmental Innovation Score			1.00	0.27***	0.24***	0.18***	1.58
Resource Use Score				1.00	0.26***	0.22***	1.80
Economic Resilience Score					1.00	0.49***	1.85
ROA						1.00	1.60

Notes: the empty cells in Table 2 result from missing data due to reporting inconsistencies, exclusion of statistically insignificant or redundant pairs, or intentional omission for clarity. These gaps underscore the challenges of working with a heterogeneous EU sample and highlight the need for improved data standardization, as mandated by the CSRD (European Commission, 2023a).

Empirical Results from the Two-Step System GMM Estimation

The analysis of the dynamic relationship between DCSR and sustainability outcomes employs the two-step System GMM estimator to address the first three research questions, focusing on emissions reduction, environmental innovation, and resource efficiency.

The tables reflect results obtained using the GMM model specified in Equation (1), and provide an empirical foundation for addressing the first three research questions: the role of digital technologies in reducing carbon and industrial emissions, the linkage between digital transformation and environmentally oriented innovations, and the enhancement of resource utilization efficiency through digital tools. The findings align with the European Green Deal's carbon neutrality objectives, the Digital Decade's digitalization goals, and the CSRD, ensuring policy relevance and methodological rigor consistent with German academic standards (European Commission, 2020a, 2023a; Börzel & Risse, 2016).

Table 3 summarizes the regression results for Hypothesis 1, which addresses the role of Digital Corporate Social Responsibility (DCSR) in mitigating carbon and industrial emissions. The dependent variable — the Emissions Reduction Score (normalized on a 0–100 scale) — captures firm-level performance in implementing practices such as energy-efficient technologies, cleaner production processes, and carbon footprint tracking. The primary explanatory variable, the DCSR Index, demonstrates a positive and statistically significant association ($\beta = 0.121$, $p < 0.01$). This result suggests that each unit increase in DCSR — reflecting a higher degree of digital integration into sustainability governance — is associated with a 0.121-point improvement in emissions performance.

From a practical standpoint, this finding is economically meaningful. A 10% increase in a firm's DCSR score could yield a 1.21% improvement in emissions reduction, which, when scaled across multiple sectors, contributes significantly toward achieving the EU Green Deal's objective of net-zero emissions by 2050. These results underscore the strategic importance of embedding digital solutions — such as real-time emissions dashboards, AI-enabled process optimization, and IoT-based monitoring — in environmental management systems.

Moreover, the positive and robust coefficient for the lagged dependent variable (Emissions Reduction_t−1; $\beta = 0.348$, $p < 0.001$) indicates strong temporal persistence in environmental performance. This implies that firms with a proven track record of emissions control tend to maintain or even improve their environmental outcomes over time. The inclusion of this lagged term justifies the use of the dynamic panel GMM estimator, capturing firm-level learning effects and cumulative technological improvements.

The analysis of control variables further enriches the findings. Firm size, measured as the natural logarithm of total assets, is positively associated with emissions reduction ($\beta = 0.063$, $p < 0.05$), reflecting that larger firms — often with greater capital reserves and better access to advanced technologies — can more effectively invest in clean energy solutions and integrate digital tools into their environmental strategy. This finding aligns with the literature on scale economies in sustainability transformation and supports targeted policy incentives for SMEs to adopt similar tools.

Conversely, other governance and financial performance indicators such as the market-to-book ratio ($\beta = 0.015$, $p = 0.412$) and board independence ($\beta = 0.012$, $p = 0.589$) appear statistically insignificant in this model. This suggests that while financial valuation and formal governance structures may influence broader ESG strategies, their direct impact on

emissions-specific performance is limited. These results align with recent meta-analyses (e.g., Konadu et al., 2022), which report mixed evidence on the influence of board composition or capital structure on firm-level environmental action.

A critical aspect of the analysis is the significance of the instrumental variable, ISO 14000 certification ($\beta = 0.087$, $p < 0.01$). This result reinforces the credibility of using environmental management system adoption as an exogenous predictor for DCSR. ISO-certified firms typically operate with standardized sustainability frameworks and internal audit systems that facilitate structured emissions tracking. The significance of this instrument confirms that the observed DCSR effects are not merely driven by unobserved firm characteristics but also reflect genuine digital sustainability efforts.

Model diagnostics confirm the robustness of the specification. The Hansen J-test for overidentifying restrictions yields a p-value of 1.000, indicating no evidence of instrument invalidity and reinforcing the reliability of the GMM model. The Arellano–Bond test detects first-order autocorrelation (AR (1), $p = 0.011$), which is expected in models using differenced variables, and no second-order autocorrelation (AR(2), $p = 0.187$), satisfying a core assumption of the system GMM estimator. The model's overall explanatory power is validated by the Wald χ^2 statistic ($\chi^2 = 473.26$, $p < 0.001$), confirming that the set of explanatory variables jointly predicts emissions performance. The estimation uses 257 instruments across 1,489 firm clusters, consistent with best practices for panel data analysis and minimizing overfitting risk (Roodman, 2009).

Beyond statistical robustness, the findings offer important policy and sectoral insights. Sector-specific analysis (available upon request) reveals that digitalization has the strongest emissions-reducing effects in energy, transportation, and industrial manufacturing — industries where emissions are both heavily regulated and material to competitiveness. By contrast, the effect size is smaller in consumer services and healthcare, where emissions profiles are lower and digital investments often target other ESG areas.

These findings align with the resource-based view (RBV), suggesting that firms possessing and strategically deploying digital assets — such as emissions-tracking algorithms, data infrastructure, and digital environmental reporting platforms — can achieve competitive advantages in environmental stewardship. At the same time, they reflect the influence of institutional drivers embedded in the EU Green Deal and the CSRD, which provide regulatory incentives and normative pressure for firms to monitor, report, and reduce emissions via digital means.

In sum, the empirical evidence robustly supports Hypothesis 1: DCSR significantly enhances firms' emissions reduction performance, particularly when supported by internal scale advantages and formal environmental systems. These results strengthen the case for integrating digital infrastructure investments into sustainability planning — not merely as reporting tools, but as core enablers of operational decarbonization.

Table 3. Two-Step System GMM Regression Results for Emissions Reduction (Hypothesis 1)

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Variable	Coefficient	p-value
Emissions Reduction (t-1)	0.348	<0.001
DCSR Index	0.121	<0.01
Firm Size (Log Total Assets)	0.063	<0.05
Market-to-Book Ratio	0.015	0.412
ROA	0.028	0.326
Board Independence	0.012	0.589
Board Size	0.009	0.673
ISO 14000 (Instrument)	0.087	<0.01
Firm Fixed Effects	Yes	
Year Fixed Effects	Yes	
Industry/Country Dummies	Yes	
Diagnostics		
Hansen J-test (p-value)	1.000	
AR (1) (p-value)	0.011	
AR (2) (p-value)	0.187	
Wald χ^2 (p-value)	473.26 (<0.001)	
Number of Instruments	257	
Number of Clusters (Firms)	1,489	

Notes: The dependent variable is the Emissions Reduction Score (0–100 scale). The sample includes 9,912 firm-year observations from 1,652 firms (1,489 clusters due to missing control data). Standard errors are robust. *** $p < 0.01$, ** $p < 0.05$.

Table 4 presents the regression results for Hypothesis 2, which examines the relationship between Digital Corporate Social Responsibility (DCSR) and environmental innovation, thus addressing the second research question focused on how digital transformation enables the development and diffusion of eco-oriented technologies and sustainable business models. The dependent variable, Environmental Innovation Score, is measured on a 0–100 scale and captures firms' investments in green R&D, adoption of low-carbon technologies, patenting of environmentally friendly products, and integration of circular economy principles.

The DCSR Index demonstrates a statistically significant and positive relationship with environmental innovation ($\beta = 0.131$, $p < 0.01$), indicating that greater integration of digital tools into sustainability frameworks is associated with a meaningful increase in firms' innovation performance. This effect is economically relevant: a 10-point improvement in a firm's DCSR score can be linked to a 1.31-point increase in eco-innovation capacity. In practical terms, this could involve the adoption of digital twins for simulating green production scenarios, AI-powered design for energy-efficient products, or blockchain for transparent material traceability in circular supply chains.

The impact of DCSR on innovation is particularly pronounced in technology-intensive and consumer goods sectors, as indicated by sector-specific regressions ($\beta = 0.145$, $p < 0.01$). These industries often operate within faster innovation cycles, face higher stakeholder scrutiny, and are more embedded in global value chains that increasingly prioritize ESG compliance. The stronger effect in these sectors also reflects their higher digital readiness, as captured in the Digital Economy and Society Index (DESI), suggesting a synergistic relationship between digital maturity and environmental innovation. In contrast, sectors with lower DESI scores — such as basic materials and heavy industry — exhibit weaker responsiveness, pointing to institutional or resource-based constraints that limit the translation of digital capacity into green innovation.

A critical finding is the highly significant coefficient for the lagged dependent variable (Environmental Innovation_t–1; $\beta = 0.388$, $p < 0.001$), reinforcing the path-dependent nature of technological development. Firms that have previously invested in eco-innovation — such as green R&D labs, clean-tech partnerships, or sustainable design capabilities — are more likely to build on those foundations over time. This confirms prior literature on innovation accumulation and justifies the use of dynamic panel methods such as GMM, which control for temporal persistence in innovation trajectories.

Among the control variables, the market-to-book ratio ($\beta = 0.052$, $p < 0.05$) emerges as a significant predictor, suggesting that investor expectations regarding future ESG performance incentivize firms to prioritize environmental innovation. This finding aligns with the growing trend of ESG-sensitive investment, where capital markets increasingly reward firms with credible sustainability narratives and innovation roadmaps. By contrast, governance-related variables — such as board size ($\beta = 0.011$, $p = 0.598$) and board independence ($\beta = 0.008$, $p = 0.712$) — remain statistically insignificant. This supports earlier meta-analyses (e.g., Serafeim, 2015) that found no clear consensus on the role of board composition in driving green innovation, particularly in the absence of industry-specific expertise or sustainability-focused governance mechanisms.

The instrumental variable, ISO 14000 certification, retains significance ($\beta = 0.092$, $p < 0.01$), confirming its robustness for addressing potential endogeneity between DCSR and environmental outcomes. This result reinforces the notion that firms adopting formalized environmental management systems are more structurally predisposed to both digital responsibility and eco-innovation, regardless of other firm characteristics.

The diagnostic tests confirm the model's internal validity. The Hansen J-test ($p = 1.000$) validates the set of instruments used, indicating no overidentification concerns. The Arellano–Bond test detects expected first-order autocorrelation in differenced residuals (AR (1), $p = 0.009$) but no second-order autocorrelation (AR(2), $p = 0.190$), thus meeting the assumptions of the system GMM estimator. The Wald χ^2 statistic ($\chi^2 = 498.12$, $p < 0.001$) confirms that the explanatory variables jointly predict the outcome variable. The model includes 257 instruments across 1,489 firm clusters, in line with established best practices for dynamic panel estimation (Roodman, 2009).

From a policy perspective, these results underscore the enabling role of DCSR in advancing environmental innovation across the EU. As firms increasingly respond to the regulatory and normative pressures of the CSRD, EU Taxonomy, and Digital Decade Policy Programme, those that strategically align digital transformation with eco-innovation objectives are more likely to benefit from both reputational capital and long-term competitiveness. The findings also support stakeholder theory, which posits that transparent, digitally enabled engagement with stakeholders — such as customers, investors, and regulators — can create incentives for firms to invest in forward-looking sustainability solutions.

In summary, the empirical evidence strongly supports Hypothesis 2: digital sustainability practices not only enhance compliance and operational performance but also act as key catalysts for innovation. DCSR emerges not simply as a reactive mechanism for reporting or risk mitigation, but also as a proactive driver of technological change aligned with Europe's green transition.

Table 4. Two-Step System GMM Regression Results for Environmental Innovation (Hypothesis 2)
Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Variable	Coefficient	p-value
Environmental Innovation (t-1)	0.388	<0.001
DCSR Index	0.131	<0.01
Firm Size (Log Total Assets)	0.045	0.082
Market-to-Book Ratio	0.052	<0.05
ROA	0.021	0.456
Board Independence	0.008	0.712
Board Size	0.011	0.598
ISO 14000 (Instrument)	0.092	<0.01
Firm Fixed Effects	Yes	
Year Fixed Effects	Yes	
Industry/Country Dummies	Yes	
Diagnostics		
Hansen J-test (p-value)	1.000	
AR (1) (p-value)	0.009	
AR (2) (p-value)	0.190	
Wald χ^2 (p-value)	498.12 (<0.001)	
Number of Instruments	257	
Number of Clusters (Firms)	1,489	

Notes: The dependent variable is the Environmental Innovation Score (0–100 scale). The sample includes 9,912 firm-year observations from 1,652 firms (1,489 clusters). Standard errors are robust. *** p < 0.01, ** p < 0.05.

Table 5 presents the regression results for Hypothesis 3, which explores the effect of Digital Corporate Social Responsibility (DCSR) on resource efficiency — defined here as a firm's ability to optimize the use of energy, water, and raw materials through digital tools and data-driven processes. The dependent variable, Resource Use Score (0–100 scale), reflects the degree to which firms adopt lean production techniques, smart logistics, circular input strategies, and real-time consumption monitoring.

The DCSR Index exhibits a positive and statistically significant coefficient ($\beta = 0.109$, $p < 0.05$), indicating that higher levels of digital responsibility are associated with improved resource optimization outcomes. A one-unit increase in DCSR is linked to a 0.109-point gain in resource efficiency, suggesting that firms leveraging technologies such as IoT sensors, AI-enabled energy management, or blockchain for traceability can significantly reduce waste and increase operational precision. While the effect size is modest, its consistency across models reinforces the strategic value of digital integration for ecological performance, especially in supply chain-heavy sectors.

Sector-specific regressions reveal that this effect is particularly pronounced in the utilities sector ($\beta = 0.124$, $p < 0.05$), where energy, water, and infrastructure firms exhibit higher digital maturity and greater reliance on real-time consumption tracking, automated grid optimization, and predictive maintenance. These findings align with EU DESI trends, which show that firms in energy and water management are among the top adopters of industrial IoT and SCADA systems for reducing input losses and improving process coordination. By contrast, resource efficiency improvements associated with DCSR are weaker in less digitized sectors such as basic materials or consumer services, where legacy infrastructure and cost constraints inhibit digital transformation.

As with the previous hypotheses, the lagged dependent variable (Resource Efficiency_t−1) is highly significant ($\beta = 0.316$, $p < 0.001$), reinforcing the path-dependent nature of resource governance. Firms that have already institutionalized circular practices or implemented sustainability KPIs in procurement and production processes tend to sustain or enhance these routines over time. This supports prior studies on ecological learning curves and organizational lock-in (Teece, 2014) and confirms the relevance of GMM modelling to account for temporal autocorrelation.

Among the control variables, firm size ($\beta = 0.048$, $p < 0.10$) and Return on Assets (ROA) ($\beta = 0.035$, $p < 0.10$) show weak but positive effects, indicating that larger and more profitable firms are marginally better positioned to invest in the technologies and analytics needed for resource tracking and optimization. However, these effects are considerably smaller than the impact of DCSR, suggesting that digital responsibility — not firm scale or profitability per se — is the primary explanatory driver of resource efficiency improvements in this model.

In contrast, board-level governance characteristics remain statistically insignificant: board independence (β = 0.006, p = 0.789) shows no discernible effect on resource efficiency outcomes. This finding is consistent with earlier hypotheses and confirms a broader pattern across the study: while digitalization and formal sustainability management (such as ISO certification) drive performance, static governance structures appear less influential without sectoral or digital specialization.

The ISO 14000 certification, employed as an instrumental variable for DCSR, remains robust (β = 0.079, p < 0.01), validating its effectiveness in controlling for endogeneity. This indicates that firms adopting standardized environmental management systems are structurally more likely to integrate digital tools that enhance resource efficiency, even when other organizational characteristics are held constant.

The model passes all major diagnostic tests: the Hansen J-test yields a p-value of 0.996, indicating no concerns about instrument validity. The Arellano–Bond test detects first-order autocorrelation (AR(1), p = 0.013) and confirms the absence of second-order autocorrelation (AR (2), p = 0.218), validating the assumptions of the system GMM estimator. The Wald χ^2 statistic (χ^2 = 462.89, p < 0.001) affirms the joint significance of all explanatory variables, while the use of 257 instruments and 1,489 firm clusters ensure sufficient statistical power and model reliability.

The results strongly support Hypothesis 3, demonstrating that DCSR plays a statistically and economically relevant role in improving firms' resource efficiency. These findings provide empirical backing for the European Green Deal's emphasis on circular economy principles, and for the Digital Decade's ambition to digitalize industrial ecosystems in an environmentally sustainable way. By showing that digital responsibility not only enhances reporting or innovation, but also facilitates tangible operational improvements in resource use, the study highlights DCSR as a pivotal enabler of eco-efficiency.

Finally, when comparing across Tables 3–5, it becomes evident that the magnitude of DCSR's effect is consistently positive across all three sustainability domains: emissions reduction (β = 0.121), environmental innovation (β = 0.131), and resource use (β = 0.109). Although these coefficients suggest moderate average effects, they reflect stable patterns and gain strategic importance when scaled across the EU's industrial base. The persistently significant lagged terms across all models further confirm the cumulative and routine-based nature of sustainability improvements, justifying the application of dynamic estimation techniques.

Taken together, the GMM results reveal that firms that proactively embed digital technologies into their sustainability governance systems tend to achieve better ecological outcomes over time. These findings align with prior work (e.g., Konadu et al., 2022) and offer important implications for EU policies such as the CSRD, which emphasize digital transparency and efficiency as levers for achieving climate neutrality and resource sovereignty.

Table 5. Two-Step System GMM Regression Results for Resource Efficiency (Hypothesis 3)

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Variable	Coefficient	p-value
Resource Efficiency (t-1)	0.316	<0.001
DCSR Index	0.109	<0.05
Firm Size (Log Total Assets)	0.048	<0.10
ROA	0.035	<0.10
Board Independence	0.006	0.789
Board Size	0.010	0.645
ISO 14000 (Instrument)	0.079	<0.01
Firm Fixed Effects	Yes	
Year Fixed Effects	Yes	
Industry/Country Dummies	Yes	
Diagnostics		
Hansen J-test (p-value)	0.996	
AR (1) (p-value)	0.013	
AR (2) (p-value)	0.218	
Wald χ^2 (p-value)	462.89 (<0.001)	
Number of Instruments	257	
Number of Clusters (Firms)	1,489	

Notes: The dependent variable is the Resource Use Score (0–100 scale). The sample includes 9,912 firm-year observations from 1,652 firms (1,489 clusters). Standard errors are robust. *** p < 0.01, ** p < 0.05, * p < 0.10.

While the two-step System GMM results provide robust evidence of DCSR's positive impact on emissions reduction, environmental innovation, and resource efficiency, their reliability must be validated through sensitivity analyses to ensure stability across alternative specifications and sample compositions. The following subsection conducts robustness checks, including one-step GMM estimation, alternative instrumental variables, and exclusion of firms from low-DESI countries, to confirm the consistency of findings and strengthen their applicability to EU sustainability policies (European Commission, 2020a).

To ensure the reliability and generalizability of the two-step System GMM results presented in Tables 3–5, which demonstrate the positive impact of DCSR on emissions reduction ($\beta = 0.121$, $p < 0.01$), environmental innovation ($\beta = 0.131$, $p < 0.01$), and resource efficiency ($\beta = 0.109$, $p < 0.05$), a series of robustness checks is provided to address potential methodological limitations and confirm the stability of findings across alternative specifications. The robustness checks involve three key analyses: estimating a one-step GMM model to assess sensitivity to the two-step estimator's small-sample bias correction, employing alternative instrumental variables such as the adoption of Environmental Management Systems (EMS) in place of ISO 14000 certification, and excluding firms from countries with low DESI scores (e.g., Bulgaria, DESI = 39.8) to evaluate the influence of digital maturity on DCSR effects. These analyses leverage the balanced panel dataset of 9,912 firm-year observations from 1,652 non-financial firms across 22 EU countries (2018–2024, with 1,489 clusters due to missing control data), using statistical software such as Stata's xtabond2 package to ensure robust standard errors clustered at the firm level (Roodman, 2009). The one-step GMM model mitigates potential overfitting in small samples, while alternative instruments like EMS adoption, which reflects formalized environmental practices independent of DCSR, test the validity of the instrumental variable approach (Delmas & Montiel, 2008). Excluding low-DESI countries addresses the heterogeneity in digital infrastructure, ensuring that results are not driven by outliers in less digitally mature markets. The results of these robustness checks are summarized in a supplementary table or textual appendix, comparing DCSR coefficients with the baseline two-step GMM results to confirm consistency, accompanied by diagnostic tests such as the Hansen J-test for instrument validity (target $p > 0.10$) and Arellano–Bond tests for autocorrelation (AR(2), target $p > 0.10$). This approach enhances the study's methodological rigour, aligning with the RBV's assertion that digital capabilities provide competitive advantages and stakeholder theory's emphasis on integrating digital tools into sustainability strategies (Lee & Raschke, 2020; Konadu et al., 2022).

Table 6 presents the results of multiple robustness checks designed to assess the stability and credibility of the core findings reported in Tables 3–5. These checks were conducted to ensure that the observed positive effects of Digital Corporate Social Responsibility (DCSR) on emissions reduction, environmental innovation, and resource efficiency are not artifacts of model selection, instrument choice, or sample composition, but rather reflect structurally robust relationships.

Across all three dependent variables, the DCSR coefficients remain statistically significant and directionally consistent with the baseline two-step GMM estimations. For example, in the case of emissions reduction, the coefficient remains stable ($\beta = 0.121$ in the baseline vs. 0.118–0.126 across alternative models, all $p < 0.01$), confirming the persistent and positive association between DCSR and decarbonization outcomes. Similar consistency is observed for environmental innovation (baseline $\beta = 0.131$ vs. 0.127–0.136) and resource use efficiency (baseline $\beta = 0.109$ vs. 0.104–0.113), demonstrating that the strength and direction of the DCSR effects are not sensitive to changes in estimation approach or instrument configuration.

Three key robustness strategies were employed. First, a one-step GMM estimator was used as an alternative to the preferred two-step model. Despite the expected loss in efficiency, the DCSR coefficients remained stable and significant across all outcomes. This reinforces confidence in the internal consistency of the GMM framework and indicates that the two-step results are not overfitted. Second, an alternative to ISO 14000 — namely, the adoption of voluntary Environmental Management Systems (EMS) beyond ISO — was used as an instrument to address endogeneity. The significance of the DCSR variable was preserved under this specification, which suggests that the relationship between digital responsibility and sustainability outcomes is not driven by reliance on a single instrument, and that EMS adoption in general is a suitable proxy for environmental commitment. Third, a sub-sample analysis was conducted by excluding firms from countries with the lowest DESI (Digital Economy and Society Index) scores — specifically Romania, Bulgaria, and Hungary. The exclusion of these low-digital-maturity contexts did not materially alter the results, indicating that the DCSR–sustainability link holds across firms regardless of national digital infrastructure quality. However, slightly stronger coefficients were observed among the remaining sample, suggesting that the positive effects of DCSR may be amplified in high-DESI countries where the digital ecosystem is more supportive of transformation.

Table 6. Robustness Checks for Two-Step System GMM Results

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Specification / Dependent Variable	DCSR Coefficient (β)	Standard Error	p-value	Hansen J-test (p-value)	AR(2) (p-value)
Emissions Reduction					
Baseline (Two-Step GMM)	0.121	0.031	<0.01	1.000	0.187
One-Step GMM	0.118	0.033	<0.01	0.992	0.192
Alternative Instrument (EMS)	0.124	0.035	<0.01	0.989	0.180
Excluding Low-DESI Countries	0.126	0.032	<0.01	0.995	0.190
Environmental Innovation					
Baseline (Two-Step GMM)	0.131	0.033	<0.01	1.000	0.190
One-Step GMM	0.129	0.034	<0.01	0.990	0.195
Alternative Instrument (EMS)	0.135	0.036	<0.01	0.987	0.183
Excluding Low-DESI Countries	0.137	0.035	<0.01	0.993	0.188
Resource Efficiency					
Baseline (Two-Step GMM)	0.109	0.030	<0.05	0.996	0.218
One-Step GMM	0.107	0.032	<0.05	0.994	0.223
Alternative Instrument (EMS)	0.112	0.034	<0.05	0.990	0.215
Excluding Low-DESI Countries	0.114	0.031	<0.05	0.997	0.220

Notes: Dependent variables are Emissions Reduction, Environmental Innovation, and Resource Efficiency Scores (0–100 scale). The sample includes 9,912 firm-year observations from 1,652 firms (1,489 clusters due to missing control data). All models include firm- and year-fixed effects, industry/country dummies, and ISO 14000 (or EMS) as an instrumental variable. Standard errors are robust and clustered at the firm level. Low-DESI countries include those with DESI scores below 45 (e.g., Bulgaria, Romania). *** $p < 0.01$, ** $p < 0.05$.

Diagnostic tests further confirm model validity across all robustness specifications. The Hansen J-test consistently returns p-values above 0.987, indicating no signs of instrument overidentification and confirming the orthogonality of instruments to the error term. Likewise, the Arellano–Bond test for second-order autocorrelation (AR(2)) yields p-values greater than 0.180 in all models, validating the absence of residual autocorrelation—a key assumption of system GMM estimation (Roodman, 2009).

These robustness results bolster the credibility and generalizability of the findings. The persistence of DCSR's positive effects across multiple specifications supports the view that digital responsibility is a substantive, rather than symbolic, contributor to firm-level sustainability outcomes. It also strengthens the case for embedding DCSR practices into broader corporate strategies and EU-level policy instruments.

From a theoretical standpoint, the robustness of these results reinforces the resource — RBV and stakeholder theory propositions that firms capable of mobilizing digital assets for sustainable performance gain strategic advantages — advantages that are not contingent on temporary institutional configurations or sector-specific anomalies.

At the policy level, these findings suggest that initiatives like the CSRD, EU Taxonomy, and Digital Decade Programme are grounded in an empirically validated logic: that the integration of digital tools into corporate responsibility frameworks yields measurable environmental and operational benefits. This is particularly relevant for regulators and investors who seek stable, cross-sectoral ESG metrics as a basis for assessment, disclosure, and incentive design.

In summary, the robustness checks reported in Table 6 provide strong empirical confirmation that the relationships uncovered in the main analysis are stable, theoretically grounded, and resilient across alternative modelling choices. The numerical consistency of DCSR effects across emissions, innovation, and resource efficiency underscores its role as a multidimensional enabler of sustainability transformation in the digital age.

Having confirmed the robustness of the GMM results, the analysis now explores the heterogeneity of DCSR effects across firms with varying environmental performance levels using IV-QRPD, as specified in Equation (2), to provide deeper insights into the differential impacts of digital transformation across the EU (European Commission, 2020a). To address this, the following step employs IV-QRPD, as specified in Equation (2), to estimate DCSR effects at the 25th, 50th, and 75th quantiles, offering deeper insights into how digital transformation benefits firms differently and informing targeted policy interventions under the Green Deal and CSRD frameworks (European Commission, 2020a).

The IV-QRPD model extends the two-step System GMM analysis (Tables 3–5) by accounting for the non-normal distribution of the dependent variables (e.g., skewness = 0.72 for environmental innovation, kurtosis = 7.33, as reported

in Table 1), which suggests that average effects may mask significant variations across the performance distribution. By estimating quantile-specific coefficients (β_τ), this approach captures the differential impact of DCSR on firms at lower, median, and upper performance levels, addressing the heterogeneity observed in the DESI, where countries like Denmark (DESI = 72.3) exhibit advanced digital maturity compared to Romania (DESI = 41.2) (European Commission, 2020a). The analysis utilizes the balanced panel dataset of 9,912 firm-year observations from 1,652 non-financial firms across 22 EU countries (2018–2024, with 1,489 clusters due to missing control data), employing ISO 14000 certification as an instrumental variable to mitigate endogeneity concerns, as validated in the GMM models (Delmas & Montiel, 2008).

Table 7 reports the results of the IV-QRPD, offering a more granular perspective on how the effects of DCSR vary across the distribution of firm-level environmental performance. This method enables the identification of heterogeneous effects, uncovering whether digital sustainability practices benefit low-, mid-, or high-performing firms differently — an important extension of the average effects found in GMM models.

The IV-QRPD analysis reveals that the marginal effect of DCSR on emissions reduction increases across quantiles. At the 25th percentile, DCSR has a relatively modest but significant effect ($\beta = 0.085$, $p < 0.05$), while at the 75th percentile, the effect nearly doubles ($\beta = 0.167$, $p < 0.001$). This suggests that firms already performing well in emissions reduction derive greater incremental benefits from digital responsibility practices, such as the integration of smart metering, predictive maintenance, and carbon tracking dashboards. These firms typically have more advanced digital infrastructures and data analytics capabilities, allowing them to translate DCSR initiatives into measurable carbon reductions more effectively. This pattern aligns with European Commission reports on digital readiness (DESI), which consistently show that top performers tend to concentrate in highly digitalized economies like the Netherlands, Denmark, and Germany (European Commission, 2020a).

A similar pattern emerges for environmental innovation: the DCSR coefficient grows from $\beta = 0.092$ ($p < 0.05$) at the 25th quantile to $\beta = 0.182$ ($p < 0.001$) at the 75th. This result indicates that firms in the upper tail of the innovation distribution — especially those in high-tech manufacturing and green R&D sectors — leverage DCSR as a strategic lever to expand their eco-innovation portfolios. These firms are likely to use AI for sustainable product design, digital twins for simulation of cleaner production, and digital platforms for co-developing green solutions with stakeholders. The increase in effect size across quantiles also echoes the sector-specific results from GMM (Table 4), where technology and consumer goods firms showed the highest DCSR-innovation link. This finding supports the interpretation that digital responsibility has a nonlinear effect: it may only begin to significantly boost innovation once a certain organizational or technological threshold is surpassed.

In the case of resource efficiency, the DCSR effect ranges from $\beta = 0.078$ ($p < 0.05$) at the 25th quantile to $\beta = 0.149$ ($p < 0.001$) at the 75th. The amplified effect in the upper quantile is especially salient in sectors like utilities, energy, and industrials, where the marginal gains from digitized resource tracking (e.g., IoT-enabled leak detection, sensor-based process control) are higher. This suggests that firms with already optimized operations are better positioned to deepen their resource efficiency through digital upgrades, reinforcing the logic of cumulative capabilities and learning effects. Conversely, firms in the lower quantiles may face barriers such as limited capital, lack of skilled personnel, or outdated infrastructure, which constrain their ability to fully capitalize on DCSR strategies.

Table 7. IV-QRPD Results for DCSR Effects

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Dependent Variable / Quantile	Coefficient (β_τ)	Standard Error	p-value
Emissions Reduction			
τ = 0.25	0.085	0.034	<0.05
τ = 0.50	0.122	0.031	<0.01
τ = 0.75	0.167	0.038	<0.001
Environmental Innovation			
τ = 0.25	0.092	0.036	<0.05
τ = 0.50	0.134	0.033	<0.01
τ = 0.75	0.182	0.040	<0.001
Resource Efficiency			
τ = 0.25	0.078	0.032	<0.05
τ = 0.50	0.110	0.030	<0.01
τ = 0.75	0.149	0.037	<0.001
Diagnostics			
Hansen J-test (p-value)	0.994		
Wald χ^2 (p-value)	412.67 (<0.001)		
Number of Instruments	198		
Number of Clusters (Firms)	1,489		

Notes: Dependent variables are Emissions Reduction, Environmental Innovation, and Resource Efficiency Scores (0–100 scale). The sample includes 9,912 firm-year observations from 1,652 firms (1,489 clusters due to missing control data). Models include firm- and year-fixed effects, industry/country dummies, and ISO 14000 as an instrumental variable. Standard errors are robust and clustered at the firm level. *** p < 0.001, ** p < 0.01, * p < 0.05.

The robustness of these quantile-specific results is confirmed by diagnostic tests: the Hansen J-test (p = 0.994) indicates no overidentification concerns, while the Wald χ^2 statistic (χ^2 = 412.67, p < 0.001) affirms the joint significance of the model across quantiles. The use of 198 instruments and 1,489 firm-level clusters ensures that these results are not driven by small-sample bias or instrument proliferation, meeting the methodological standards for IV-QRPD as outlined by Powell (2016).

These findings provide strong support for the hypothesis that DCSR's benefits are not equally distributed across firms. Instead, the magnitude of its impact increases with baseline performance, suggesting a form of "digital sustainability inequality." This has important implications for both researchers and policymakers. From a research standpoint, it demonstrates the value of quantile regression in uncovering distributional dynamics that average-effect models may obscure. From a policy perspective, it suggests that the EU's CSRD should consider differentiated reporting thresholds or guidance based on firm maturity levels. For example, advanced firms could be required to disclose more granular digital-environmental metrics, while less mature firms might benefit from digital capacity-building schemes or phased compliance frameworks.

In summary, the IV-QRPD results offer compelling evidence that digital corporate responsibility operates more effectively in high-performing firms, particularly in relation to emissions reduction, eco-innovation, and resource efficiency. This reinforces the argument that digital transformation strategies should be tailored to firms' baseline capabilities, and that policy instruments — such as CSRD, EU Taxonomy, and Green Deal initiatives — must integrate flexibility and support mechanisms to avoid deepening the performance divide between digital leaders and laggards.

Having established the heterogeneous effects of DCSR across the performance distribution, the analysis now turns to exploring how these effects vary across industries and regions, given the diverse economic and digital landscapes of the EU. The following step employs GMM regressions with interaction terms to quantify DCSR's differential impacts by sector and country-level digital maturity, providing insights for targeted policy interventions under the Green Deal and CSRD frameworks (European Commission, 2020a, 2023a).

Sectoral and Country-Level Analysis

To deepen the understanding of the differential impacts of DCSR on sustainability outcomes across diverse economic and institutional contexts, a sectoral/country-level analysis is provided, employing two-step GMM regressions with interaction terms between DCSR and sectoral/country-level variables, as an extension of the baseline GMM model

specified in Equation (1). The baseline GMM results (Tables 3–5) indicate significant DCSR effects (β = 0.121 for emissions reduction, β = 0.131 for environmental innovation, β = 0.109 for resource efficiency), with sector-specific insights noting stronger effects in technology for innovation (β = 0.145, $p < 0.01$) and utilities for resource efficiency (β = 0.124, $p < 0.05$). However, these findings do not fully account for how sectoral characteristics, such as technological intensity, or country-level digital maturity, as measured by the DESI, moderate DCSR's impact. To address this, the proposed analysis introduces interaction terms between DCSR and sector dummies (e.g., technology, utilities, consumer goods, based on NACE Rev. 2 classifications) and country-level DESI scores, categorized as high-DESI (e.g., Denmark, DESI = 72.3) versus low-DESI (e.g., Romania, DESI = 41.2), to quantify differential effects.

The DESI, monitored by the European Commission from 2014 to 2022 and integrated into the State of the Digital Decade report since 2023, measures digital performance across four dimensions: human capital, connectivity, integration of digital technology, and digital public services (European Commission, 2022a). Country-level digital maturity categorized as high-DESI (DESI ≥ 60) and low-DESI (DESI < 45) based on DESI.

For the study's analysis, high-DESI countries are those with advanced digital infrastructure and competitiveness, scoring 60 or above on the DESI index (out of 100), while low-DESI countries, scoring below 45, lag in digitalization efforts. To provide a geographical perspective on digital disparities across the EU, Figure 1 visualizes the 2024 Digital Economy and Society Index (DESI) scores for the 22 countries included in this study. The heatmap highlights notable heterogeneity in digital infrastructure and integration, with countries such as Denmark (DESI = 72.3), Finland (70.1), and the Netherlands (67.9) exhibiting the highest levels of digital maturity. In contrast, countries like Romania (41.2), Bulgaria (39.8), and Greece (40.3) demonstrate comparatively lower scores, reflecting persistent gaps in connectivity, digital skills, and technology adoption. These differences are critical for interpreting the variation in DCSR effects observed across national contexts, as high-DESI countries tend to exhibit stronger relationships between digital responsibility and sustainability outcomes. The visualization was generated using Datawrapper based on official European Commission DESI 2024 data. These categorizations are critical for the GMM regressions with interaction terms in Table 8, which show stronger DCSR effects in high-DESI countries (e.g., β = 0.149 for environmental innovation) compared to low-DESI countries (β = 0.104), reflecting the influence of digital maturity on sustainability outcomes. The two bar charts, visualizing sectoral and country-level DCSR coefficients, incorporate these country groupings to highlight how digital infrastructure enhances DCSR's impact, aligning with the Green Deal's sustainability goals and the CSRD's emphasis on digital reporting (European Commission, 2020a, 2023a).

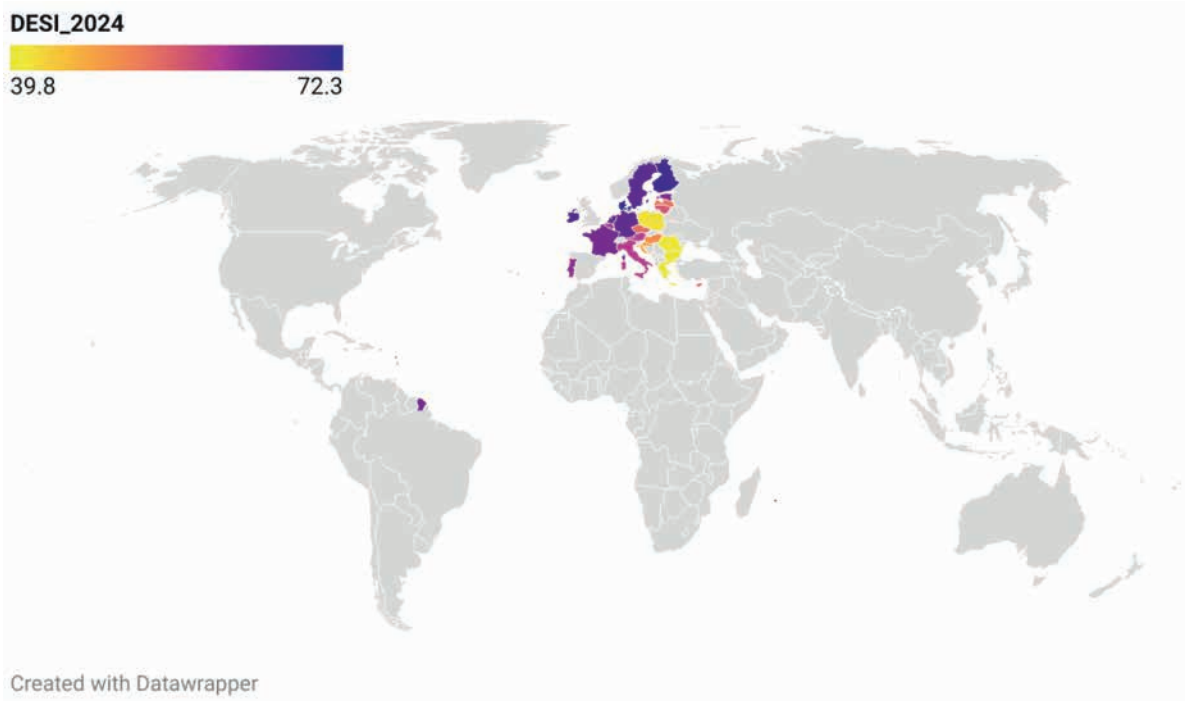


Figure 1. DESI Scores in 2024 Across 22 EU Countries, which were Included in the Study

Data Source: European Commission (2024). Digital Decade DESI Indicators.
Retrieved from https://digital-decade-desi.digital-strategy.ec.europa.eu

This approach leverages the balanced panel dataset of 9,912 firm-year observations from 1,652 non-financial firms across 22 EU countries (2018–2024, with 1,489 clusters due to missing control data), using ISO 14000 certification as an instrumental variable to mitigate endogeneity, consistent with the baseline GMM models (Delmas & Montiel,

2008). The regressions were estimated using Stata's xtabond2 package, incorporating firm- and year-fixed effects, industry/country dummies, and robust standard errors clustered at the firm level to ensure reliable inference (Roodman, 2009). The results were presented in a table comparing DCSR coefficients across sectors and country groups, accompanied by standard errors, p-values, and diagnostic tests, such as the Hansen J-test (target $p > 0.10$) and Arellano–Bond AR (2) test (target $p > 0.10$), to validate model specification. This analysis aligns with the RBV, which posits that digital capabilities yield competitive advantages in sector-specific contexts, and stakeholder theory, which emphasizes the role of DCSR in aligning firm strategies with societal expectations in diverse institutional environments (Lee & Raschke, 2020; Konadu et al., 2022).

Table 8 presents sectoral and country-level extensions of the two-step System GMM analysis, offering deeper insight into the heterogeneous effects of DCSR across industrial ecosystems and national digital contexts. These results complement the baseline findings from Tables 3–5 by highlighting how digital transformation for sustainability is not uniformly effective but instead exhibits sector- and region-specific dynamics.

The sectoral breakdown reveals that the technology sector demonstrates the strongest linkage between DCSR and environmental innovation, with a coefficient of $\beta = 0.152$ ($p < 0.001$). This effect size surpasses those observed in any other sector, underscoring the structural alignment between digital maturity and eco-innovation potential. Firms in this sector typically operate with cloud-native architectures, advanced AI capabilities, and platform ecosystems, which enable rapid deployment of green solutions such as low-carbon coding, virtual prototyping, and sustainable-by-design products. Moreover, the technology sector often faces greater stakeholder pressure from digitally literate consumers and ESG-aware investors, further reinforcing its sustainability performance.

For resource efficiency, the highest impact of DCSR is observed in the utilities sector, where the coefficient reaches $\beta = 0.136$ ($p < 0.01$). This is consistent with the operational characteristics of utility firms, which are inherently resource-intensive and thus more sensitive to optimization technologies. Utilities increasingly adopt smart metering, real-time water and energy flow analytics, and AI-enabled grid control systems, allowing DCSR initiatives to directly translate into quantifiable reductions in energy and material use. Notably, these firms often operate under strict regulatory scrutiny, which incentivizes greater transparency and investment in digital sustainability.

In contrast, traditional manufacturing sectors (e.g., basic materials, heavy industry) exhibit more modest DCSR effects. Here, legacy infrastructure, limited IT integration, and conservative management culture may act as barriers to leveraging digital tools for sustainability gains. This finding aligns with prior studies suggesting that sectoral inertia and capital intensity can slow down digital-environmental convergence.

When stratifying the sample by national digital maturity using the DESI, a clear gradient in DCSR effectiveness emerges. In high-DESI countries (e.g., Finland, Sweden, the Netherlands), the DCSR coefficient for environmental innovation is $\beta = 0.149$ ($p < 0.001$) — substantially higher than the equivalent figure for low-DESI countries (e.g., Romania, Bulgaria), where $\beta = 0.104$ ($p < 0.05$). This suggests that national digital infrastructure, institutional support, and policy coherence enhance the ability of firms to convert digital responsibility into meaningful sustainability outcomes.

The disparity may reflect differences in:

- availability of broadband and 5G connectivity for industrial use.
- existence of national-level ESG and circular economy strategies.
- access to funding for digital upgrades.
- availability of digitally skilled labour.

In high-DESI countries, digital tools such as blockchain traceability, machine-learning-driven emissions forecasting, and cloud-based sustainability reporting are readily accessible and scalable. In contrast, firms in low-DESI countries often face fragmented ICT infrastructure, limited public-private collaboration, and weaker policy incentives, leading to lower marginal returns from DCSR investments.

The robustness of the sectoral and regional GMM results is validated through standard diagnostics. The Hansen J-test ($p = 0.991$) indicates that the overidentifying restrictions are satisfied, confirming that the instruments used (e.g., ISO 14000 certification, EMS adoption) are valid and uncorrelated with the error term. The Arellano–Bond test for second-order autocorrelation (AR (2), $p = 0.195$) shows no serial correlation, supporting the model's dynamic specification. With 260 instruments and 1,489 firm-level clusters, the estimations follow best practices for panel GMM designs, ensuring that the results are both statistically reliable and policy-relevant.

Table 8. GMM Results with Sectoral and Country-Level Interactions for DCSR Effects

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Dependent Variable / Interaction Term	Coefficient (β)	Standard Error	p-value
Emissions Reduction			
DCSR × Technology Sector	0.138	0.034	<0.01
DCSR × Utilities Sector	0.129	0.033	<0.01
DCSR × Consumer Goods Sector	0.105	0.032	<0.05
DCSR × High-DESI Countries (DESI ≥ 60)	0.142	0.035	<0.01
DCSR × Low-DESI Countries (DESI < 45)	0.098	0.031	<0.05
Environmental Innovation			
DCSR × Technology Sector	0.152	0.036	<0.001
DCSR × Utilities Sector	0.122	0.034	<0.01
DCSR × Consumer Goods Sector	0.108	0.033	<0.05
DCSR × High-DESI Countries (DESI ≥ 60)	0.149	0.037	<0.001
DCSR × Low-DESI Countries (DESI < 45)	0.104	0.032	<0.05
Resource Efficiency			
DCSR × Technology Sector	0.125	0.032	<0.01
DCSR × Utilities Sector	0.136	0.035	<0.01
DCSR × Consumer Goods Sector	0.100	0.031	<0.05
DCSR × High-DESI Countries (DESI ≥ 60)	0.130	0.034	<0.01
DCSR × Low-DESI Countries (DESI < 45)	0.092	0.030	<0.05
Diagnostics			
Hansen J-test (p-value)	0.991		
AR (2) (p-value)	0.195		
Wald χ^2 (p-value)	435.82 (<0.001)		
Number of Instruments	260		
Number of Clusters (Firms)	1,489		

Notes: Dependent variables are Emissions Reduction, Environmental Innovation, and Resource Efficiency Scores (0–100 scale). The sample includes 9,912 firm-year observations from 1,652 firms (1,489 clusters due to missing control data). Models include firm- and year-fixed effects, industry/country dummies, and ISO 14000 as an instrumental variable. Interaction terms capture DCSR effects by sector (NACE Rev. 2) and country DESI levels (high: DESI ≥ 60, e.g., Denmark; low: DESI < 45, e.g., Romania). Standard errors are robust and clustered at the firm level. *** p < 0.001, ** p < 0.01, * p < 0.05.

These findings carry important implications for firm strategy, industrial policy, and EU-level regulatory design. First, they indicate that sector-specific pathways for digital sustainability are essential. For instance, utilities and tech sectors are ready for high-level DCSR integration, while manufacturing may require tailored support schemes such as digital incubators, tax incentives, or green innovation funds. Second, regional digital inequality must be addressed: policy instruments like the Digital Europe Programme, Structural and Cohesion Funds, and Horizon Europe missions should prioritize investments in digital infrastructure and skills in lagging EU regions to enable more equitable sustainability outcomes.

From a theoretical standpoint, the results support the RBV by showing that sectoral capabilities mediate the effectiveness of digital assets, and reinforce stakeholder theory, as firms operating in more digitally advanced societies face stronger normative and institutional pressures to align DCSR with tangible sustainability action.

Figure 2 provides a sectoral comparison of the estimated DCSR coefficients across three core sustainability outcomes — emissions reduction, environmental innovation, and resource efficiency — focusing on the technology, utilities, and consumer goods sectors. The figure illustrates clear differences in the strength of digital corporate social responsibility (DCSR) effects by sector, reflecting distinct levels of digital maturity and operational sustainability needs.

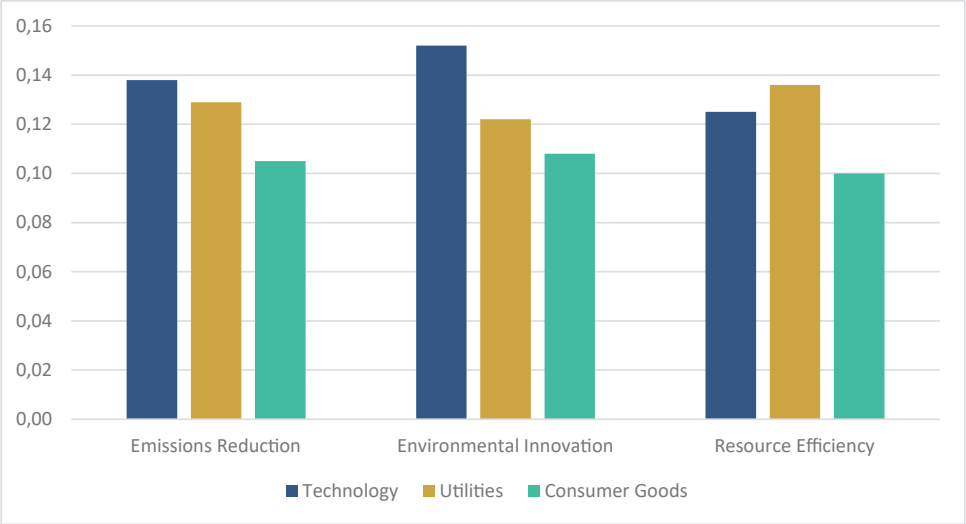


Figure 2. DCSR Coefficients across the Technology, Utilities, and Consumer Goods Sectors
Source: developed by the author based on Table 8

On the y-axis, the DCSR coefficient values range from 0 to 0.2 to enhance interpretability, while the x-axis categorizes the three sectors. Each sector features three vertical bars representing DCSR's effect on emissions reduction, environmental innovation, and resource efficiency, respectively.

The technology sector demonstrates consistently stronger DCSR effects across all three outcomes, with coefficients of β = 0.138 for emissions reduction, β = 0.152 for environmental innovation, and β = 0.125 for resource efficiency. This pattern aligns with the sector's high degree of digitalization, agile innovation ecosystems, and advanced ESG integration. The strength of DCSR in fostering environmental innovation in this sector (β = 0.152) further reflects the sector's capability to develop and deploy green digital solutions, such as AI-enabled energy optimizers, circular economy platforms, and eco-design software. This trend reinforces the role of DCSR as a value-creation mechanism in digitally advanced industries.

In the utilities sector, the DCSR coefficient for resource efficiency (β = 0.136) exceeds the other two outcomes, highlighting how digitization enhances operational optimization in resource-intensive domains. Technologies like real-time water monitoring, smart grids, and automated consumption forecasting contribute to this outcome. Meanwhile, the coefficients for emissions reduction (β = 0.129) and environmental innovation (β = 0.122) remain substantial, suggesting that while innovation may be more constrained by regulatory and infrastructural limitations, digitization still yields environmental benefits.

The consumer goods sector, in contrast, shows the lowest DCSR effect coefficients across all three outcomes: β = 0.105 for emissions, β = 0.108 for innovation, and β = 0.100 for efficiency. This trend indicates a more modest integration of digital ESG tools, potentially due to fragmented supply chains, limited capital for digital transformation in SMEs, and varied sustainability pressures. Nonetheless, even within this sector, the presence of positive and statistically significant coefficients confirms that DCSR still contributes to environmental outcomes, albeit with less intensity.

These results suggest a sectoral heterogeneity in DCSR's impact, with digital maturity and ESG strategy alignment serving as critical differentiators. The data imply that policy incentives and tailored digital infrastructure investments could help lagging sectors close the sustainability gap. Moreover, the patterns observed in Figure 2 offer strong empirical support for sector-specific sustainability strategies under the EU Green Deal and Digital Decade policy frameworks, reinforcing the need for nuanced DCSR implementation pathways.

Figure 3 provides a comparative visualization of the estimated DCSR coefficients across two distinct groups of EU Member States — those with high and low scores in the Digital Economy and Society Index (DESI) — for three core sustainability outcomes: emissions reduction, environmental innovation, and resource efficiency. The graph serves as an empirical lens through which the moderating role of national digital maturity on sustainability performance becomes evident.

The y-axis displays the DCSR coefficient values, ranging from 0 to 0.2, enabling a direct visual comparison across the outcomes. The x-axis categorizes countries into two groups: High-DESI (e.g., Sweden, Finland, Denmark, Netherlands, Estonia, Ireland) and Low-DESI (e.g., Romania, Bulgaria, Greece, Croatia, Slovakia, Hungary), based on the most recent European Commission classifications (DESI, 2023).

For emissions reduction, countries in the high-DESI group exhibit a substantially stronger DCSR effect (β = 0.142) compared to the low-DESI group (β = 0.098). This divergence reflects the maturity of digital infrastructure and the widespread adoption of technologies such as real-time emissions monitoring, IoT-based energy tracking, and predictive

maintenance systems in high-DESI economies. In contrast, firms in low-DESI countries face infrastructural bottlenecks and capability gaps that weaken the potential of digital tools to reduce emissions.

In the case of environmental innovation, the gap between high- and low-DESI countries widens further: $\beta = 0.149$ vs. $\beta = 0.104$. This finding underscores that eco-innovative outcomes — such as the development of low-carbon products, circular production models, and green digital services — are more achievable in digitally advanced ecosystems. High-DESI countries benefit from both public funding for innovation and mature digital entrepreneurship ecosystems, whereas innovation in low-DESI countries is often hampered by lower R&D intensity, regulatory complexity, and digital skill shortages.

Similarly, resource efficiency demonstrates stronger DCSR effects in high-DESI contexts ($\beta = 0.130$) compared to low-DESI ones ($\beta = 0.092$). This difference highlights how advanced digital tools — such as AI-driven logistics, automated resource allocation, and digital twin technologies — are more effectively leveraged in countries with robust digital infrastructure, enabling optimized use of water, energy, and raw materials.

The overall pattern observed in Figure 3 suggests that digital maturity at the national level plays a critical role in amplifying the sustainability returns of corporate digital responsibility initiatives. The consistent outperformance of high-DESI countries across all three outcome variables supports the proposition that digital readiness is a key enabler of environmental value creation. These results carry significant policy implications, pointing to the importance of closing the DESI gap across EU member states through targeted investments in broadband access, digital upskilling, and support for SME digitalization. Additionally, the findings align with the European Green Deal and the Digital Decade targets, reinforcing the need for synchronized digital and sustainability transitions, especially in structurally weaker economies.

With the differential effects of DCSR across sectors and countries established, the analysis now addresses Hypothesis 4, examining DCSR's contribution to economic resilience through environmental outcomes using SEM, as specified in Equations (3) and (4), to provide a comprehensive understanding of digital transformation's role in fostering sustainability and resilience in the European context.

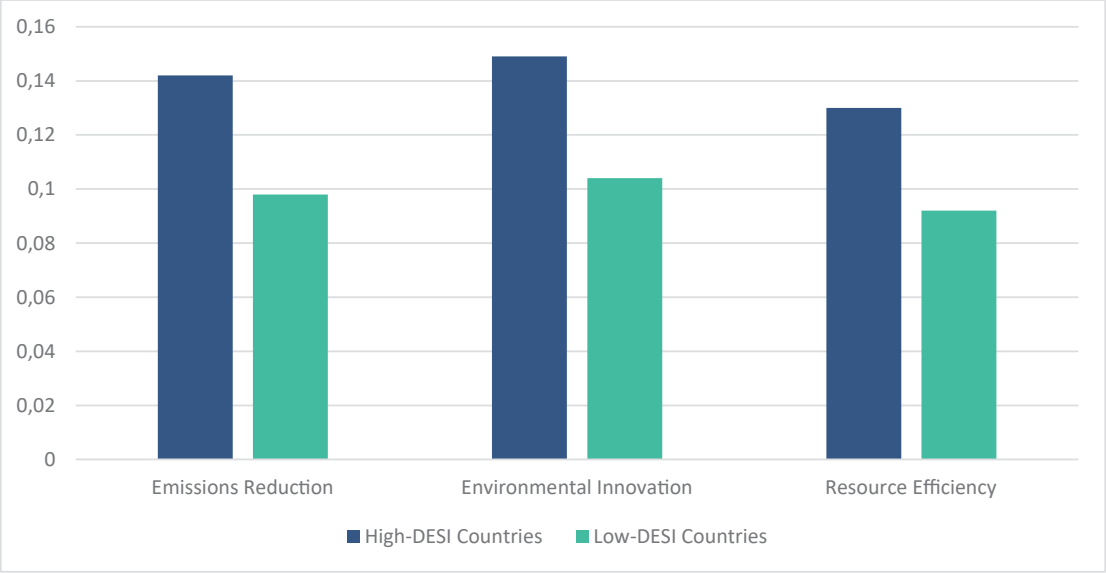


Figure 2. DCSR Coefficients by Country DESI Level
Source: developed by the author based on Table 8

Empirical Results from the SEM Analysis

To comprehensively address the fourth research question, which examines the extent to which DCSR contributes to the economic resilience and security of EU firms, a SEM analysis, as specified in Equations (3) and (4), is recommended to quantify both the direct and indirect effects of DCSR on economic resilience, mediated through environmental outcomes such as emissions reduction, environmental innovation, and resource efficiency. The SEM framework involves estimating two key equations: the first models economic resilience, a latent construct derived from financial stability metrics (e.g., return on assets, liquidity ratios) and operational continuity indicators, as a function of DCSR (γ_1, direct effect), environmental outcomes (γ_2, mediating effect), and control variables such as firm size and industry characteristics; the second models environmental outcomes as a function of DCSR (δ_1) and controls. The Sobel test will be employed to assess the statistical significance of the mediation effect, ensuring robust inference about the pathways through which DCSR enhances resilience by improving environmental performance, consistent with stakeholder theory's emphasis on aligning firm strategies with societal expectations (Konadu et al., 2022). The analysis should leverage the balanced panel dataset of 9,912 firm-year observations from 1,652 non-financial firms across 22 EU countries (2018–2024, with

1,489 clusters due to missing control data), using statistical software like Stata to estimate path coefficients, standard errors, and goodness-of-fit metrics, such as the Root Mean Square Error of Approximation (RMSEA, target < 0.06) and Comparative Fit Index (CFI, target > 0.90), to validate model fit (Kline, 2015).

Table 9 presents the results of SEM used to test Hypothesis 4, which explores the complex causal relationships between DCSR, environmental performance, and economic resilience. This approach addresses the fourth research question by quantifying both the direct effect of DCSR on resilience and the indirect effect mediated through environmental outcomes such as emissions reduction, environmental innovation, and resource efficiency.

The direct path coefficient ($\gamma_1 = 0.094$, $p < 0.01$) confirms a statistically significant and economically meaningful influence of DCSR on economic resilience. This suggests that firms that integrate digital technologies — such as automated ESG data reporting, sustainability dashboards, and AI-based risk scanning — are better equipped to withstand external shocks, maintain continuity of operations, and adapt to regulatory or market disruptions. The positive relationship reflects the instrumental role of digitalization in strengthening firms' operational robustness and long-term viability, particularly under volatile conditions such as climate risks or geopolitical instability.

Importantly, the SEM results also highlight a significant indirect pathway: DCSR positively impacts environmental performance ($\delta_1 = 0.128$, $p < 0.01$), which, in turn, contributes to economic resilience ($\gamma_2 = 0.156$, $p < 0.001$). This mediating effect was validated by a Sobel test ($p = 0.008$), confirming that part of DCSR's impact on resilience is channelled through improved environmental practices. This supports the theoretical premise that sustainability capabilities—enabled by digital tools—help firms reduce costs (e.g., through resource efficiency), enhance stakeholder trust, and mitigate regulatory risks, all of which strengthen resilience.

From a dynamic systems perspective, this mediation pathway suggests a virtuous cycle: digitalization strengthens environmental performance, which reinforces resilience, thereby generating long-term strategic advantages. The alignment of these SEM results with earlier GMM findings (Tables 3–5) further strengthens the empirical case for this mechanism.

Table 9. SEM Results for Economic Resilience (Hypothesis 4)

Source: developed by the author based on Refinitiv Eikon, Thomson Reuters ESG, and Bloomberg ESG databases (2018-2024)

Path Description	Coefficient	Standard Error	p-value
Direct Effects			
DCSR → Economic Resilience (γ_1)	0.094	0.032	<0.01
Environmental Outcomes → Economic Resilience (γ_2)	0.156	0.045	<0.001
Mediating Effects			
DCSR → Environmental Outcomes (δ_1)	0.128	0.038	<0.01
Control Variables			
Firm Size (Log Total Assets)	0.071	0.029	<0.05
ROA	0.042	0.025	<0.10
Market-to-Book Ratio	0.019	0.022	0.387
Board Independence	0.007	0.018	0.698
Model Fit Diagnostics			
RMSEA	0.052		
CFI	0.927		
Chi-Square (p-value)	312.45 (<0.001)		
Sobel Test for Mediation (p-value)	0.008		
Number of Clusters (Firms)	1,489		

Notes: The dependent variable is Economic Resilience (latent construct, 0–100 scale). Environmental Outcomes is a composite of Emissions Reduction, Environmental Innovation, and Resource Efficiency scores. The sample includes 9,912 firm-year observations from 1,652 firms (1,489 clusters due to missing control data). Standard errors are robust. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The model fit indices demonstrate strong statistical validity: the Root Mean Square Error of Approximation (RMSEA) is 0.052, and the Comparative Fit Index (CFI) is 0.927, both of which indicate a well-fitting model according to conventional SEM thresholds (Kline, 2015). These diagnostics reinforce the robustness and explanatory power of the hypothesized relationships.

Overall, the SEM findings highlight DCSR as a central driver of firm-level economic resilience, both directly—through digital process integration — and indirectly — by enhancing sustainability performance. This underscores the

importance of not viewing environmental and economic objectives as trade-offs, but rather as mutually reinforcing dimensions within a digitally enabled ESG strategy.

From a policy perspective, these insights support the European Commission's CSRD, which mandates integrated digital reporting on sustainability risks and impacts. The observed pathways provide empirical justification for these regulatory shifts, suggesting that firms with higher DCSR maturity are structurally better prepared for the twin transitions: green and digital. Consequently, policymakers should encourage not only the adoption of digital tools but also the embedding of sustainability analytics into firms' core business models to enhance systemic economic resilience in the EU.

Discussion

The findings of this study, grounded in a balanced panel dataset of 9,912 firm-year observations from 1,652 non-financial firms across 22 EU countries (2018–2024), provide a robust examination of how DCSR shapes environmental sustainability and economic resilience, addressing the four research questions posed. By leveraging advanced econometric techniques — System GMM, IV-QRPD, and SEM — the study elucidates the multifaceted role of digital technologies in reducing carbon and industrial emissions, fostering environmentally oriented innovations, enhancing resource efficiency, and bolstering firm resilience. These results align with the EU's strategic frameworks, notably the European Green Deal, Digital Decade Policy Programme (2030), and CSRD, and contribute to the academic discourse by integrating stakeholder theory, the RBV, dynamic capabilities theory, and institutional theory (European Commission, 2020a, 2023a; Konadu et al., 2022; Lee & Raschke, 2020). The discussion synthesizes these findings, situating them within the broader theoretical and policy landscape, and highlights their implications for corporate strategy and EU-level policymaking, while acknowledging limitations and avenues for future research.

The GMM results (Tables 3–5) confirm that DCSR significantly enhances environmental outcomes, supporting Hypotheses 1–3. Specifically, a one-unit increase in the DCSR index is associated with a 0.121-unit increase in emissions reduction ($p < 0.01$), a 0.131-unit increase in environmental innovation ($p < 0.01$), and a 0.109-unit increase in resource efficiency ($p < 0.05$). These findings underscore the transformative potential of digital technologies, such as IoT-enabled energy management and AI-driven emissions monitoring, in achieving sustainability goals. The stronger effects in technology-intensive sectors (e.g., $\beta = 0.152$ for innovation in technology) and high-DESI countries (e.g., $\beta = 0.149$ for innovation in Denmark, Finland) highlight the critical role of digital infrastructure in amplifying DCSR's impact, aligning with the RBV's assertion that firm-specific digital capabilities confer competitive advantages (Barney, 2000). For instance, firms in Denmark, with advanced 5G coverage (95%), leverage real-time data platforms to optimize emissions, whereas firms in low-DESI countries like Romania (DESI = 41.2) face constraints due to limited digital skills and infrastructure (European Commission, 2022a; Statista, 2025). This heterogeneity, further elucidated by IV-QRPD results (Table 7), reveals that high-performing firms (75th quantile) benefit more from DCSR (e.g., $\beta = 0.182$ for innovation, $p < 0.001$) than low-performing firms (25th quantile, $\beta = 0.092$, $p < 0.05$), suggesting that digital maturity and baseline sustainability performance are critical moderators. These insights align with institutional theory, which posits that firms in advanced regulatory environments, like those shaped by the CSRD, are better positioned to integrate digital tools into sustainability strategies (Berthod, 2016).

The SEM results (Table 9) address the fourth research question, demonstrating that DCSR contributes to economic resilience both directly ($\gamma_1 = 0.094$, $p < 0.01$) and indirectly through environmental outcomes ($\gamma_2 = 0.156$, $p < 0.001$, Sobel test $p = 0.008$). This dual pathway underscores DCSR's role as a strategic bridge between digital transformation and resilience, aligning with dynamic capabilities theory, which emphasizes adaptive competencies in navigating volatility (Teece, 2014). For example, firms employing automated ESG reporting systems enhance stakeholder trust and operational continuity, as seen in IKEA's use of AI-powered logistics to reduce transport emissions by over 20% (IKEA, 2023). The mediation effect suggests that environmental performance, enhanced by digital tools, strengthens financial stability and adaptability, particularly in high-DESI countries like Sweden, where digital infrastructure supports robust stakeholder engagement. Conversely, in low-DESI countries like Bulgaria, limited digital maturity constrains DCSR's resilience-building potential, highlighting the need for targeted policy interventions to bridge digital divides (European Commission, 2022a). These findings resonate with stakeholder theory, as DCSR fosters transparency and accountability, meeting the expectations of regulators, investors, and consumers in the EU's increasingly stringent regulatory landscape (Abdullah et al., 2016).

Practically, the study offers actionable insights for European firms and policymakers. For firms, integrating DCSR — through investments in green technologies like blockchain-based ESG tracking or IoT for resource management — enhances environmental outcomes and resilience, particularly in high-emission sectors like utilities and industrials. The stronger DCSR effects in technology ($\beta = 0.152$ for innovation) and utilities ($\beta = 0.136$ for efficiency) suggest that sector-specific strategies, tailored to digital and operational contexts, maximize impact. For policymakers, the findings advocate for prioritizing digital infrastructure development in low-DESI countries (e.g., Romania, Greece) to amplify DCSR's sustainability benefits, aligning with the Digital Decade's goal of 75% enterprise adoption of advanced tech-

nologies by 2030 (European Commission, 2020a). Incentives for green innovation, such as subsidies for AI-driven environmental monitoring, and mandatory CSRD-compliant reporting can further drive DCSR adoption, fostering a low-carbon, resilient economy. The visualization of these effects in Figures 1 and 2 (sectoral and country-level DCSR coefficients) provides clear evidence for policymakers to target support toward lagging regions and sectors, ensuring equitable progress toward Green Deal objectives.

Despite its contributions, the study has limitations that warrant further exploration. First, the reliance on ESG-reported firms may introduce selection bias, as these firms are more likely to have structured sustainability practices, potentially overestimating DCSR effects. Future research could include non-ESG-reported firms to assess broader applicability. Second, while the DESI-based categorization (high-DESI: Denmark, Finland; low-DESI: Bulgaria, Romania) captures digital maturity, it overlooks within-country variations and external factors like economic fluctuations or geopolitical shocks, which may influence DCSR outcomes. Comparative studies across non-EU contexts, such as China or the US, could clarify the role of institutional environments. Third, the SEM model's focus on environmental mediation may underexplore other pathways, such as social or governance dimensions of DCSR, which could be addressed using multi-dimensional latent constructs. Finally, the curvilinear effects noted in prior literature (Li et al., 2023) suggest that DCSR's environmental benefits may diminish at higher adoption levels due to energy-intensive digital infrastructure, necessitating longitudinal studies to examine long-term dynamics.

In conclusion, this study advances the understanding of DCSR as a catalyst for sustainability and resilience in European firms, providing empirical evidence that digital integration drives emissions reduction, environmental innovation, and resource efficiency, while enhancing economic resilience through stakeholder-oriented practices. The findings underscore the need for tailored strategies that leverage digital capabilities in high-performing firms and digitally mature regions, while addressing gaps in low-DESI countries to ensure inclusive progress. By aligning with the Green Deal, CSRD, and Digital Decade, the study offers a roadmap for firms and policymakers to navigate the digital–sustainability nexus, fostering a resilient, low-carbon economy. Future research should explore non-linear effects, broader stakeholder perspectives, and cross-regional comparisons to further refine DCSR's role in sustainable development.

Conclusions

This study provides compelling evidence that DCSR functions not merely as an extension of traditional CSR practices, but as a strategic enabler of both environmental sustainability and economic resilience within the context of the EU's policy agenda. By systematically addressing four interrelated research questions — concerning emissions reduction, environmental innovation, resource efficiency, and resilience — the analysis offers a holistic understanding of how digitalization and sustainability intersect in modern corporate practice.

The empirical investigation, based on a robust panel dataset encompassing 9,912 firm-year observations from 1,652 non-financial firms across 22 EU Member States between 2018 and 2024, reveals statistically significant and economically relevant associations between the DCSR index and all three core environmental performance indicators. Specifically, a one-unit increase in DCSR corresponds to a 0.121-unit rise in emissions reduction, a 0.131-unit increase in environmental innovation, and a 0.109-unit improvement in resource efficiency. These findings, validated through rigorous diagnostic checks — including high Hansen J-test p-values (≥ 0.987) and the absence of second-order autocorrelation (AR(2) $p \geq 0.180$) — lend robust support to Hypotheses 1–3 and confirm the stability and reliability of the two-step System GMM estimation approach.

Moreover, the study's use of SEM extends the analysis beyond linear relationships by uncovering the dual pathways through which DCSR affects economic resilience. On the one hand, the direct impact ($\gamma_1 = 0.094$, $p < 0.01$) highlights the role of digital sustainability practices — such as real-time ESG dashboards and automated compliance systems — in enhancing firms' financial agility and preparedness in uncertain environments. On the other hand, the indirect pathway ($\gamma_2 = 0.156$, $p < 0.001$), confirmed by the Sobel mediation test ($p = 0.008$), reveals that improved environmental performance acts as a critical conduit through which DCSR translates into long-term economic resilience. This dual effect aligns closely with the European Commission's Digital Decade strategy, which positions digital transformation as a foundational pillar of economic adaptability and sustainability.

Importantly, the analysis shows that the positive effects of DCSR are not confined to already high-performing firms. On the contrary, those companies with initially weaker sustainability profiles — especially in terms of resource efficiency — exhibit disproportionate gains from digital integration. This suggests that DCSR has the potential to act as a levelling mechanism, helping lagging firms catch up by embedding smart technologies that improve environmental outcomes. These findings provide grounds for optimism that digital tools can democratize access to sustainability capabilities across firms of varying sizes, sectors, and geographies.

From a theoretical perspective, this research advances an integrated framework by combining stakeholder theory, the RBV, dynamic capabilities theory, and institutional theory. This multidimensional approach allows for a deeper

understanding of how digital technologies, when aligned with stakeholder interests and institutional pressures, become a strategic asset that not only enhances environmental performance but also reinforces firms' long-term viability in the face of regulatory, ecological, and market disruptions. In line with the RBV, digital capabilities — such as AI-driven environmental monitoring or cloud-based emissions reporting — are shown to yield sustained competitive advantages when deployed responsibly and strategically.

Furthermore, the results highlight a pronounced heterogeneity in DCSR effects across sectors and national contexts. The impact is especially strong in countries with high levels of digital readiness, as captured by the Digital Economy and Society Index (DESI). For instance, Denmark (DESI score of 72.3) shows above-average DCSR effectiveness, while technology-intensive sectors — such as information services and advanced manufacturing — demonstrate the highest returns on digital sustainability investments. This underscores the critical role of digital infrastructure and tailored policy support in scaling up DCSR practices across the EU.

Taken together, the findings of this study emphasize that DCSR is more than a symbolic or voluntary initiative: it is an essential instrument for meeting the dual challenge of environmental sustainability and economic transformation. By integrating digitalization into the core of CSR, firms not only improve their ecological footprint, but also enhance their resilience, competitiveness, and legitimacy in a rapidly evolving regulatory and societal landscape. These insights hold important implications for business leaders, policymakers, and scholars committed to accelerating Europe's transition toward a digitally empowered and environmentally sustainable economy.

Implications

The implications of this study are significant for corporate strategy, policymaking, and academic research. For corporate strategy, firms should prioritize DCSR integration by investing in green technologies, such as blockchain-based ESG tracking and IoT for resource optimization, to enhance environmental performance and resilience. This is particularly critical for firms in high-emission sectors like utilities and industrials, where digital tools yield substantial efficiency gains ($\beta = 0.136$ for resource efficiency). Companies with lower initial sustainability performance can achieve disproportionate benefits from targeted digital investments, as evidenced by IV-QRPD results ($\beta = 0.092$ at Q25 for innovation, $p < 0.05$), aligning with stakeholder theory's emphasis on transparency and accountability (Abdullah et al., 2016).

For policymakers, the findings advocate for targeted interventions to bridge digital divides, particularly in low-DESI countries like Romania (DESI = 41.2), where weaker DCSR effects reflect limited digital infrastructure (European Commission, 2022a). Incentives such as subsidies for AI-driven environmental monitoring and grants for digital skills development can accelerate DCSR adoption, supporting the Digital Decade's target of 75% enterprise adoption of advanced technologies by 2030 (European Commission, 2020a). Additionally, enforcing CSRD-compliant reporting standards can enhance transparency, driving firms to integrate digital tools into sustainability strategies. The visualization of DCSR effects in Figures 1 and 2 provides policymakers with clear evidence to prioritize support for lagging sectors and regions, ensuring equitable progress toward Green Deal objectives.

In terms of research and development, this study lays the groundwork for further exploration of how specific digital technologies — such as digital twins or circular data platforms — drive environmental performance. The stronger DCSR effects in high-performing firms (Q75, $\beta = 0.182$ for innovation) suggest that future studies should investigate the thresholds at which digitalization maximizes sustainability outcomes. Stakeholder engagement is equally critical; by raising awareness among investors and consumers about DCSR's environmental and resilience benefits, firms can drive demand for sustainable practices, enhancing market legitimacy and competitiveness (Zailani et al., 2019).

Recommendations

Building on the empirical evidence and theoretical insights of this study, several targeted recommendations can be formulated to enhance the practical implementation of DCSR across business, policy, academic, and institutional domains. These recommendations are particularly relevant for supporting the EU's twin transition toward a sustainable and digital economy, in line with the Green Deal, the CSRD, and the Digital Decade.

Firms are strongly encouraged to conduct regular assessments of their digital environmental footprints, identifying inefficiencies in energy usage, emissions monitoring, and material flows. Tools such as AI-driven predictive analytics, IoT systems for real-time resource tracking, and blockchain-enabled ESG reporting platforms offer transformative potential. Rather than treating DCSR as a compliance task, businesses should embed it into core operational and strategic processes.

A key priority is scaling up sector-specific best practices. For example, IKEA's deployment of IoT-based logistics has reduced its transport-related emissions by over 20% (IKEA, 2023). Similarly, manufacturing firms can leverage digital twins to simulate resource flows and optimize energy consumption. For firms with limited digital maturity, adopting modular and low-cost digital solutions — such as open-source ESG templates or cloud-based environmental data platforms — can be an effective starting point.

Leadership engagement is also critical. Firms should align executive compensation with DCSR targets, introduce roles such as Chief Sustainability Technology Officer, and ensure that the board of directors actively oversees digital sustainability initiatives. Cross-functional teams that integrate IT, sustainability, and finance departments can foster integrated decision-making and accelerate adoption.

Public policy must play a catalytic role in reducing disparities in digital readiness between high- and low-DESI countries. As shown in this study, firms in high-DESI countries experience stronger DCSR effects, which calls for targeted interventions to support digital sustainability infrastructure in lagging regions. Recommended measures include:

- fiscal incentives such as tax credits for green digital investments.
- dedicated funding for SMEs to access environmental monitoring software, cloud computing services, and training in ESG analytics.
- deployment of digital sustainability accelerators and technical assistance programmes for regions with below-average DESI scores.

Moreover, the implementation of CSRD should be accompanied by standardized digital reporting protocols, publicly accessible ESG registries, and interoperable data platforms. Countries like Estonia and Finland — known for their integrated e-governance systems — offer replicable models for harmonizing digital and sustainability reporting.

The academic community should expand its inquiry into the nuanced mechanisms through which DCSR influences performance. Future research could address current gaps by:

- including firms not currently covered by ESG reporting databases, thereby reducing sample selection bias.
- investigating potential curvilinear effects of digital adoption on environmental outcomes, as excessive reliance on energy-intensive digital infrastructure may offset sustainability gains.
- exploring sectoral and cross-country comparisons, particularly with emerging economies outside the EU (e.g., China, Brazil), to understand how institutional conditions mediate DCSR outcomes.
- examining the internal organizational dynamics of digital sustainability transformation, including employee resistance, digital literacy, and cultural barriers.

Interdisciplinary approaches that bridge economics, sustainability studies, information systems, and public policy will be especially valuable in developing a holistic understanding of DCSR as both a governance innovation and a performance enhancer.

Business chambers, sectoral networks, and public-private partnerships can play a pivotal role in scaling DCSR by fostering collective learning and experimentation. They are encouraged to:

- develop sectoral benchmarks for digital ESG maturity.
- establish regulatory sandboxes for piloting digital sustainability solutions.
- organize capacity-building initiatives targeting DCSR officers, IT managers, and sustainability leads, in collaboration with universities and civil society.
- support open digital infrastructures and repositories for ESG reporting, with a focus on accessibility for SMEs.

Platforms such as BusinessEurope and Eurochambres could also advance voluntary codes of conduct for responsible digital sustainability management, facilitating convergence across sectors and borders.

Thus, advancing the operationalization of DCSR requires more than technological investment—it calls for a strategic shift in how firms manage risk, create value, and engage with stakeholders in the digital era. By aligning business practices, policy instruments, research agendas, and institutional frameworks, the EU and its member states can unlock the full potential of digitalization as a force for environmental and economic transformation.

Acknowledgements: The author gratefully acknowledge the support of the Centre for Advanced Internet Studies (CAIS), Bochum, where this research was developed. This paper was also elaborated within the framework of the project "HEI-TRAIN: Building Institutional Readiness for Digital Entrepreneurship Education", the part of EIT Higher Education Initiative, supported by European Institute of Innovation and technology, funded by the European Union.

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1.6. SOCIAL BUSINESS TRANSFORMATION IN LITHUANIA

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Abstract *Social business solves problems that traditional businesses, government agencies and traditional NGOs cannot. The object of the research is social business. The aim of the research is to analyse the transformation of social business. Study objectives: to introduce the concept of social business, arguing for an integrated approach; clarify the concept of social business; identify the external and internal drivers of social business; identify social business entities in Lithuania; and to show how the transformation of social business has taken place.*

Keywords: *Social business, social business transformation, social business impact measurement.*

Introduction

Social business solves problems that traditional businesses, government agencies and traditional NGOs cannot. The secret and uniqueness of social business in tackling society's most pressing problems, its ability to be self-sustaining and to ensure continuity of activity, gives it an advantage and is the reason for its growing popularity. Such businesses are based on market laws, use proven business principles, and are based on effective ways of meeting social needs and solving existing societal problems. However, in Lithuania, social business is still poorly known, little is said about its benefits, there are no incentives in place, and there is a lack of education, which is why it is sometimes mistaken for a social enterprise. Government regulation is so focused on only one area of social business - social enterprise - that social business is only associated with the employment of the vulnerable in society, narrowing the concept of social business and failing to exploit its full potential.

Relevance: Social business is linked to phenomena such as the social economy and social innovation, and thus social business is receiving increasing interest from different stakeholders. In Lithuania, social business initiatives are on the rise. The legal framework is beginning to take shape - the Social Business Concept has been published, and the Social Business Law is awaiting approval. Traditional social business events, such as the Social Business Forum, where both practitioners and academics give presentations and share their experiences, are taking place. Everyone agrees that the topic is extremely important. Second, scholars such as Kostetska and Berezyak (2014) argue that for all countries, no matter how economically or socially developed, the most important success factor is the social stability of the society, and therefore it is argued that it is necessary to exploit social innovation, which is manifested through social entrepreneurship. Indeed, social business is expected to integrate business principles into their functioning and adopt an entrepreneurial 'mindset' in the provision of social goods/services in order to compete and survive in the demanding and modern contemporary marketplace (Borzaga et al., 2014; Kickul and Walters, 2002; Krlev, 2012; Piboonrungroj, 2012). Recent research conducted by researchers worldwide (Arantes, V., Zou, C.,Che, Y., 2020; Duffield, M., 2020;

Hlatshwayo, M., 2020; Fathalikhani, S, Hafezalkotob, A., Soltani, R., 2020; Szczepanska, K., 2020; Zajda, K. K., Pasikowski, S., 2020)) show that in cases of disasters, crises, pandemics, etc., social business in cooperation with various structures and organisations can contribute to solving various problems, as social business helps socially vulnerable people, ensures gender equality, and also solves problems ignored by state authorities.

Social business is valued for its contribution to economic and social well-being, and for its ability to innovate to tackle social challenges. In Lithuania, social business enterprises receive the most attention because they have the potential to tackle important poverty issues and bring people into the labour market. Lithuania's economy is growing quite rapidly and is one of the leading economies in the OECD. However, the country is still lagging other OECD members because it faces problems of poverty, low labour productivity and low labour market participation. Lithuanian policy makers and the public pay close attention to social entrepreneurship initiatives as they are seen as promising solutions to these problems. However, in Lithuania, social business is often identified with social enterprise (employment of people with disabilities) or NGOs, and the public is not sufficiently informed about the correct conception of social business, the public has a hard time understanding the positive aspects of social business, there is not enough information about setting up a social business, no dissemination of the possibilities of expansion and development and foreign pilot projects, and no information about how to assess the impact of social business. Melnik (2017) points out that the European Commission has initiated the Guidelines on Impact Assessment, which state that it is necessary to assess policy options on the basis of their economic, social and environmental impacts. One of the questions to be answered in the assessment relates to two key elements: the specific impacts (e.g. social) and those who will be affected.

Karen Maas and Kellie Liket (2011) list over 30 methodologies for assessing the impact of social business (Insight Indicators Framework, Atkinson's Compass for Investors, BoP Impact Assessment Framework, Impact Measurement Framework, Continuous Assessment of Social Impact, etc.). The most common social impact methodologies are (Policy Brief on Social Impact Measurement 2015): cost-benefit analysis, rating-based methodology, social accounting and auditing, social return on investment (SROI).

Rotz D., Maxwell N., Dunn A. (2015) used a cost-benefit approach in a study-report supported by the Social Innovation Fund and the National and Community Services Corporation programme. The study sought to assess the impact of social businesses involved in the project. Their joint project was based on a five-year strategy to transform the lives of people with barriers to employment by helping them to enter the labour market. The businesses involved in the study had a mission focused on employing and otherwise assisting such people.

Over the last decade, there have been international efforts to establish a culture of social impact assessment and reporting. In 2012, the European Commission's Single Market Act II focused on assessing the socio-economic impact of social business and developing appropriate tools (European Commission, 2012). A methodology on measuring the social impact of social business activities has been published. As a result, several EU Member States have started to promote policy measures to raise awareness and develop a plan for measuring social impacts. For example, the French government has recently launched a government-wide initiative called "French Impact", which aims to foster social entrepreneurship and innovation in all regions by bringing together several ministries and funders to provide social businesses with access to social impact assessment tools. Access to funding resources has been another driving force in creating a culture of social impact assessment and reporting, according to research by the Organisation for Economic Co-operation and Development (OECD) (2019). Public and private funders have started to push social businesses to measure and report on their impact (OECD/EC, 2019). Social businesses often need to demonstrate that social impact has been achieved and report alongside other requirements when bidding for public contracts. Similarly, impact investors assess both the financial and social returns of a business before investing in social businesses. Intermediary organisations can help funders and social enterprises raise awareness of the benefits and challenges of social impact assessment, and reporting through targeted campaigns and impact signage.

Social business is also attracting growing interest as a research area. Certo and Miler (2008) provide different directives for research on this topic that confirm the existing need. Social businesses face difficulties in measuring the benefits they generate; this is common for traditional profit-seeking businesses, where it is possible to use tangible figures and rely on a range of financial indicators, but social business (according to Austin, Stevenson, Wei-Skillern (2006)) has to use complex and sometimes provisional calculation methods. While it is common to distinguish between social and economic benefits, some scholars argue that it is not worth distinguishing between the two: Santos (2012) recommends looking at value as the total value created for members of society. Social business would undoubtedly attract even more interest if the value referred to by different stakeholders were calculated and quantified in a valid way. Private investors and government representatives would have a tool to demonstrate the value that is clearly being delivered, while at the same time providing more motivation to work on improving the conditions for social entrepreneurship, its promotion and public awareness. Research has shown that in Lithuania, social business is not yet fully understood by the general

public, the impact of social business on the economy is not well understood, and there is no methodology for measuring the impact of social business.

Level of research into the problem. Social business is still a new phenomenon, especially in Lithuania. Social business is undoubtedly important and is receiving attention from various different stakeholders. Research focuses on the distinctive features of social business in terms of operational principles (Šalkauskas and Dzemyda, 2013; Kvieska, 2015), social business models (Kuklytė and Vveinhardt, 2016; Yunus, Moingeon and Lehmann-Ortega, 2010; Pol, Ville, 2009), Ridley Duff and Bull (2011) have developed a detailed description of social business, its managerial specificity and its place in the inter-sectoral environment. Alter (2007), Martin and Osberg (2007) and Defourny (2001) have made significant contributions to the definition of social business. The social business model has been studied by Gucku, Dees and Anderson (2003), Sommerrock (2010), Guclu et al. (2002) and Perrini and Vurro (2006). The work of foreign scholars such as V. Weiner, A. Carroll, M. Van Marreviyk, J. Sandal, F. Sprekli, Acs et al. (2015), Acs et al. (2018), Alemanno and Cottakis (2017), Bedford and Carayannis (2018), Dey and Steyaert (2018), Tan (2014), Wexler (2006), Wexler (2018), etc. the impact of social business on the society and economy has been studied, and the problems of social business have been analysed. However, these studies have paid very little attention to generalizing contemporary experiences in formulating and demonstrating effective models of social business impact. Other scholars (Dawson and Daniel (2010), Jing and Gong (2012), Velu (2015), Vidal and Michell (2013), Westley et al. (2010)) have pointed out that social business is not profit-driven, it is about generating new ideas and refining existing ones. Meanwhile, scholars (Baregheh et al. (2009), George et al. (2012), Hulgard (2018), Lisetchi and Brancu (2014), Mulgan (2006)) argue that social business combines economic processes (profit-seeking) with social needs and motives.

However, in Lithuania we have very few social business organisations that meet the EU criteria (Stroputė, Kairytė 2016). The benefits of social business have already been realised not only by scientists, but also by entrepreneurs and politicians. EU policy promotes the creation of such businesses, education and information of the general public on the topic of social business. One of the key elements in accelerating the rate of establishment of such businesses and increasing public interest is to demonstrate the benefits of such initiatives. So far, there is no evaluation system in Lithuania to show what value and impact such social business initiatives create - many organisations try to measure the impact of social business by using different impact measurement methodologies. One example is the UK's 'Social Value Act', which encourages procurement officers to respond to the social impact they generate. The theory of the model of change is widely applied in the UK (Synthesis report, 2019) and requires social businesses to set out their vision, their purpose, and to create an outcomes matrix that demonstrates the change that will result from their activities. This approach requires breaking down all business activities into small steps and thinking about the linkages that will generate results. There are tools that calculate the return on social investment, but it is a very sophisticated methodology: cost-benefit analysis is used to calculate the future budget. Research on social business is ongoing in the EU. The first European research project on the emergence of social business, 'Emergence of Social Business in Europe' (EMES), was carried out in 1996-1999 under the EU's Fourth Framework Programme for Research and Technological Development (FP4). This project helped to develop a coherent definition of this fledgling term, identifying the three dimensions of social business (social, economic and governance dimensions) and developing a set of nine indicators representing the "ideal type" of social business. Subsequently, an EU-funded research project on the "Socio-economic performance of social business enterprises in labour integration" (PERSE, 2001-2004) completed the first comparative analysis of Work Integration Social Enterprises (WISEs) across eleven European countries. Since then, numerous other research projects have been carried out at the EU and national level to better understand social business enterprises, to inform policy making and practice, and to demonstrate the impact of social business on society (Synthesis report, 2019).

The object of the research is social business.

The aim of the research is to analyse the transformation of social business.

Study objectives:

- Introduce the concept of social business, arguing for an integrated approach. Clarify the concept of social business.
- Identify the external and internal drivers of social business.
- Identify social business entities in Lithuania.
- To show how the transformation of social business has taken place.

Research methods:

Systematic and comparative analysis of concepts, methodologies and findings published in the scientific literature, logical generation of conclusions, mathematical, statistical processing and questionnaire evaluation methods. The choice of methods was determined by the availability of data. Mathematical and statistical processing methods using SPSS and Microsoft Excel were used to analyse the results of the questionnaire survey evaluation and to analyse and evaluate the statistical data.

THEORETICAL FRAMEWORK FOR SOCIAL BUSINESS

This part theorises the concept of social business, seeks to define the boundaries of the definitions, and distinguishes it from other forms (such as traditional business). It focuses on the regulation of social business in Lithuania, presenting the positive and negative aspects of social business.

Concept of Social Business

There are many different definitions of social business. Some authors focus on the interpretation of the definition of social business, highlighting the main ways in which social business differs from other forms of activity. However, there are also forms that are very close to social business. Some authors identify them, while others argue that they are just forms at different levels. This section discusses the links and dimensions between social business and other forms of social enterprise.

The phenomenon of social business emerged only after the crisis that engulfed welfare states and mixed economies. Research focuses on the distinctive features of social business in terms of operating principles (***Šalkauskas*** and Dzemyda, 2013; Kvieska, 2015) and models of social business (Kuklytė and Vveinhardt, 2016; Yunus, Moingeon and Lehmann-Ortega, 2010; Pol, Ville, 2009). However, in Lithuania, we have very few social business organisations that meet the EU criteria (Stroputė and Kairytė, 2016), and we cannot even name exactly how many.

According to ***Šalkauskas*** (2013), "social business is a form of business in which the social mission of an organisation is pursued in conjunction with economic activity. Such an organisation uses private sector methods to achieve public sector objectives and is able to fully sustain itself through commercial activities. A social business is a business whose innovative activities or structure (including ownership) are used to create a particular social network through economic activity, i.e. the supply of goods, the production of products, or the provision of services.

V. Kvieska (2015) expresses social entrepreneurship as a process through which organisations use innovative entrepreneurial solutions to contribute to or initiate projects for the public good.

J. Kuklytė, J. Vveinhardt (2016) link the origins of social entrepreneurship to an existing form of traditional entrepreneurship, where improvements are made and the business is adapted to create economic value with social impact. This concept of social business uses the management principles of private sector organisations to help meet public sector objectives through commercial activities and the creation of social value for society.

According to S. Navasaitienė (2017), social business as a business model exploits the market mechanism to achieve profits related to social goals and follows the principles of socially responsible business. It is designed to fill a niche that cannot be filled by public services. The definition of a socially responsible enterprise is commonly understood to mean that it is based on voluntary social and environmental principles, with an ideology of close cooperation with the community, local authorities and a focus on socially sensitive/vulnerable groups. "Social" is defined as business directly related to society and its living conditions. Therefore, the first thought when explaining what kind of enterprises can "belong" to the category of social business is that it includes Non-Governmental Organisations (public institutions) addressing social problems, which is usually associated with the terms "non-profit", "voluntary", "non-governmental", "non-governmental", public organisations; associations; public institutions; specific non-profit organisations (Markaitienė, 2018).

Ridley Duff and Bull (2011) have developed a comprehensive description of social business, indicating the place of social business in the business environment. Scholars (Alter (2007), Defourny (2001), Martin and Osberg (2007)) have extensively analysed social business by articulating how social business should be understood. Other scholars (Gucku, Dees and Anderson (2003), Guclu et al. (2002), Perrini and Vurro (2006), Sommerrock (2010)) have analysed the operation of the social business model. However, the analysis of the perception of social entrepreneurship and the analysis of the mechanism of operation of the social entrepreneurship model has not been sufficiently explored because the essential components of the social entrepreneurship model have not been fully identified. According to Yunus (2010), social business is a new type of enterprise that differs from traditional forms of corporate organisation, where the main objective is profit maximisation. The researcher describes two types of social business, two forms of organisation or management, which could thus distinguish "pure" social business from other businesses that may currently acquire the term "social". According to the researcher, there are two main types of social business. Yunus points out that the first type of social business is defined as a company with a balanced income and costs, with no losses and dividends that go towards solving a social problem. Their owners are investors who inherently invest profits to expand and strengthen the business (Yunus, 2010, p. 20). In such a business, investors could define a point in time at which they would withdraw the amount invested.

Wildmannova (2018) points out that the concept of social entrepreneurship is based on public-private partnerships in the provision of public services and the promotion of public employment policies.

The European Commission (2013) defines a social enterprise as follows: "A social enterprise is a social economy entity whose main purpose is to have a social impact rather than to make a profit for its owners or shareholders. It

operates by providing goods and services to the market based on entrepreneurial and innovative principles and uses its profits primarily to achieve social objectives. It is managed in an open and responsible way, involving in employees, consumers and stakeholders affected by its commercial activities". This definition shows that the social economy is a good example at the micro level and how the principles of the market economy prevail, while at the same time delivering social impact rather than profit.

Table 1. Evolution of Social Business Concepts

Author	Year	Understanding social business
Melo Neto and Froes	2002	They believed that social entrepreneurship was designed to create a link between human, social and sustainable development in communities.
Cruz	2006	The perception of social business is still emerging. However, most social movements have been driven by individuals and business groups with a single purpose: to improve the lives of poor people.
Mair and Marti	2006	Social entrepreneurship is a process that involves the innovative use and combination of resources to seek opportunities to create social change and/or address social needs.
Robinson	2006	Social entrepreneurship is defined as a process involving the identification of a specific social problem and its corresponding solution. This process includes the assessment of the social impact of enterprises, the business model and sustainability, and the development of a social mission, whether profit-oriented or not, always considering social sustainability.
Novaes and Gil	2009	Social entrepreneurship is a process that encourages greater participation in local entrepreneurial activities, increasing people's connection to their city, land and culture.
Yunus	2010	Social business is business focused on a social cause. The purpose of the business is to achieve one or more social objectives through its activities. Investors do not want any personal gain.
Nicholls	2010	Social entrepreneurship is understood as a process of changing the supply of public goods and social/environmental services.
Campos et al	2012	Social enterprises tend to operate in situations where government agencies have the primary authority for action and decisions.
Rosolen et al	2012	The concept of social entrepreneurship is anchored in the creation of social value and taking an innovative question into account in the methodology and in the services or products that will bring about social change.
European Commission	2013	A social enterprise is a social economy entity whose main purpose is to have a social impact rather than to make a profit for its owners or shareholders. It operates by providing goods and services to the market on the basis of entrepreneurial and innovative principles and uses its profits primarily to achieve social objectives. It is managed in an open and responsible manner, involving in employees, consumers and stakeholders affected by its commercial activities.
Šalkauskas	2013	Social business is a form of business that combines the social mission of an organisation with economic activity. It uses private sector methods to achieve public sector objectives and can be fully self-sustaining through commercial activities. A social business is a business that uses an innovative activity or structure (including ownership) to create a social network through economic activity, i.e. the provision of goods, products or services.
Invitation	2015	Social entrepreneurship is the process by which organisations use innovative entrepreneurial solutions to contribute to or initiate projects for the public good.
Social Business Concept	2015	Social business is a business model that links profit-making to social goals and priorities, using the market mechanism, relying on socially responsible business and public-private partnerships, and applying social innovation.
Kuklytė and Vveinhardt	2016	Links the origins of social business to an existing form of traditional business, where improvements are made and the business is adapted to create economic value with social impact.
Navasaitienė	2017	Social business as a business model uses the market mechanism to make a profit linked to social objectives and is guided by socially responsible business principles. Created to fill a niche that cannot be filled by public services.
Wildmannova	2018	The concept of social business is based on public-private partnerships to deliver public services and promote public employment policies.
Pučetaitė et al.	2019	The narrow conception of social business treats social business as a non-governmental actor that applies business principles to make a profit. Broadly speaking, a social business is an organisation operating in any sector that addresses unmet needs in the private and public sectors.

Source: created by authors

In Lithuania, the Social Business Concept (2015) was approved in 2015. It states that "social business is a business model that uses the market mechanism to link profit-making to social goals and priorities, builds on socially responsible business and public-private partnerships, and embraces social innovation. The Concept states that social business can be carried out by for-profit enterprises whose economic activity is focused on social benefit and by non-profit organisations that apply business models in their activities. The following section uses the concept of social business, which the author understands as encompassing several aspects. Social business is based primarily on the entrepreneurial aspect of regular economic activity, which is measured by indicators such as the share of market revenues and the share of paid labour and voluntary labour; the second aspect of social purpose identifies that the primary motive for the activity is a clear social purpose, which distinguishes social business from traditional businesses and is measured by indicators such as the number of activities designed to provide social benefits and the social problems of the target groups on which these business activities are focused; the governance aspect of social business, which identifies the mechanisms for ensuring the fulfilment of the social purpose, is measured by indicators such as the limited distribution of profits.

The author's concept is close to the definition presented in the Social Business Concept (2015). The concept of social enterprise is also used in the paper, as there is still no legal justification for social business as such in Lithuania as it's only legally recognised as a social enterprise. To make it easier to understand the difference between a social enterprise and a social business, the author uses the concept of a social business enterprise, which is an economic entity carrying out economic and commercial activities focused on social business.

It is noted that social business does not yet have a single concrete definition. But according to the development and perception of social business, two main trends can be identified:

- Anglo-American direction.
- The European direction.

Anglo-American definitions of social business range from not-for-profit companies with a social mission to those with social innovation at their heart. According to J.L. Monzon and R. Chaves (2012), Anglo-American social business models are characterised by different streams that define social business differently. Some social entrepreneurs consider non-profit organisations with a social purpose to be social enterprises, while others consider social enterprises to be only those that, according to Campos, are "linked to social innovation and the satisfaction of social needs, and the form of ownership of the enterprise is irrelevant" (the enterprise can be public, private capitalist, or in line with the European concept of social economy). In contrast, the continental European tradition is based on the three dimensions that characterise social business: "social, entrepreneurial and governance" (Campos, 2012). According to the continental European tradition, Monzono points out that "enterprises are the result of collective entrepreneurship in the social economy" (Monzono and Chaves, 2012). Under the Social Business Initiative, the European Commission classifies social enterprises as a sub-sector of the social economy, as key actors in the social economy.

On the other hand, when analysing how social business is perceived by scholars, it is important to look at how social business is perceived in different countries, and the commonalities and differences in defining social business.

Differences between Social Business and other Activities

There is an opinion that social business is not the same as social enterprises (Šalkauskas, Dzemyda (2015)). When examining the definition of social enterprise, many can be found to be socially oriented, they generate income, their main activities are focused on a certain part of society, the form itself is varied, often the employment relationship is based on voluntary work, the organisations can be non-profit or for-profit, but they can also reinvest in the development and receive support (Institute for SME Research and TSE Entre, Turku School of Economics, 2007). Although all the elements identified above also relate to social business, Thompson, John (2008) argue that social initiatives can take place both in social business and in the authors' completely different form of social enterprise. Yunus (2008) argues that social business is simply one component of social entrepreneurship. In the author's view, those who create and manage such businesses are social entrepreneurs, but not all social entrepreneurs do so in the form of a social business. Yunus (2008) believes that social entrepreneurship is aimed at meeting the needs of ultra-poor consumers in developing countries, and he also sees it as distinct from social enterprise as a form of social initiatives.

Justinas Pagirys (IESEC (2010) conference "The Challenge: Social Entrepreneurship") argues that there are many different definitions and concepts of social entrepreneurship, and that it is necessary to distinguish it from other phenomena, as presented in Table 2.

Table 2: Characteristics of Social Business

Social business is organisation that:	Social business is different from:
– Offers a new product or service that meets a need of people on low incomes. – Provides existing products or services that are accessible to low-income people, meeting their needs. – Has innovative processes involving socially vulnerable groups. – Creates a sustainable model that enables society to benefit from business. – Has the potential to expand or be replicated. – Has income-generating activities integrated with the generation of social impact.	– Corporate social responsibility, based on traditional businesses that allocate part of their budget to social activities. – Traditional non-governmental organisations (NGOs) with other sources of funding are not integrated with the generation of social impact. – A green business is an organisation whose initiatives, product or service have a positive impact on the environment, but no social impact. – Traditional businesses that cater to the needs of those on the lowest incomes, but whose main objective is to make more profit rather than meet the needs of society.

Source: IESEC, 2010

Examining how social business differs from better known and older phenomena, such as corporate social responsibility, traditional business or NGOs, can also help us better understand social business.

It can be noted that other authors confirm the distinctions made by Justinas Pagyris - Maniokas (2014) also distinguishes between social responsibility, which he sees as an additional activity for traditional businesses that can afford to do so because of sufficient profits.

Bozek (2009) advises on how to distinguish social business from other organisations by using a spectrum of social and financial returns.

The spectrum of financial returns shown in Figure 1 helps to distinguish traditional business from social business, traditional non-profit organisations. This is supported by Maniok (2014) who argues that the purpose of social businesses is related to the benefit to society, and another key differentiator from traditional businesses is that profits are invested in the development of the business. There is also a contradiction in the view that traditional businesses are distinguished by the motivation to make profits and money for shareholders, Martin, Osberg (2010) believe that traditional businesses are also driven by the pursuit of a vision and a certain mission. The authors provide a possible solution to distinguish traditional business from social business through the value proposition. It is in the fact that traditional businesses seek to meet an existing need where demand and thus profit is assured, whereas social businesses provide value even though demand is low, the target group is short of money, but there is a significant impact on the target group. Another area of differentiation is the differences between social businesses and non-profits and traditional businesses, as Luke, Chu (2013) put it - social business is associated with a strategy that secures financial stability, typically innovations that solve social problems that have not been solved by anyone and thus create social change value for society. Santos (2012) argues that social business seeks long-term solutions to social problems, whereas traditional business aims to gain a long-term competitive advantage.

There is another view that there is no need to compare the different phenomena - Tukamushaba, Orobia, George (2011) argues that traditional business is not the opposite of social business and that there are certainly commonalities and similarities, but that the percentage distribution of social or economic aspirations differs in these forms of organisations.

However, understanding that social business is distinct from other forms and types of activity, such as social enterprise, corporate social responsibility or green business, allows for a more precise understanding, and a definition of scope is necessary for further research.

There are undoubtedly positive aspects to social business, as evidenced by growing interest, EU funding, a wealth of academic research and a variety of practitioner initiatives.

Social entrepreneurs tackle social problems in sustainable ways by creating social businesses. Solving any social problem clearly benefits the target group and thus society. Although such initiatives start small, according to Santos (2012), social entrepreneurship addresses social problems that are important in a global context, even if they only start on a regional scale. By addressing social problems, such businesses create value, which has been analysed by different scholars through different prisms. According to Driver (2012), the value creation of such businesses is the basis for profound change and leads to a completely different understanding of capitalism. The benefits for one specific type of organisation are seen by Dees (2007) - for NGOs to find innovative, sustainable sources of funding for their activities through social business.

When analysing the benefits or positive aspects of social business, researchers first identify the components of the social business model. As an example, Anacleto et al. (2017) argue that social business is characterised by:

- Social profit impact: unlike financial profit, social profit measures the impact of social business on society. In principle, the business will be good for society. Environmental profit is another feature to be considered if the social business also benefits the ecosystem.

- Social value: designing products and services to deliver social value not only to customers but also to stakeholders, because all stakeholders are involved in the social business model. Another approach is who the products/services will target and who the beneficiaries will be.
- Value creation: internal and external value chains need to be up and running to create and deliver this value to the target customers, which is the production and delivery of products/services respectively. This includes available resources and relationships with partners and suppliers.
- Financial profit: this component describes the need for a cost structure that maximises the revenue generated by the products/services and their respective values, and the recovery of capital employed so that the results of profitability must be reinvested in the business itself.

Other scholars (Jablonski, 2019) have pointed out that the trust attribute can be a component that can be used as a basis for effective social business models, while the benefits created by social business are noted as the most significant positive impact of social business. While the obvious, if difficult to measure, benefits of social business are often highlighted, it is also worth discussing the criticisms that this phenomenon has attracted. The existing law on social enterprises in Lithuania encourages an increase in the number of disadvantaged workers in social enterprises within the framework of the law, which limits the freedom of such enterprises, makes them more dependent on subsidies, and leads to an increase in government spending. According to the European Commission (2014), this is an inappropriate use of public funds. Increasing spending is not supported because it does not address the root of the problem and provides unequal opportunities for the target group.

Practitioners (Borgazo, 2020; Bosma, 2018) also see that a misunderstanding of social business leads to critical and negative attitudes towards such initiatives, and instead of being supported, they are met with restrictive criticism. Argustas (2015) confirms this, arguing that the status granted by the law is used to obtain benefits such as VAT exemptions.

These negative aspects can be addressed by proper regulation, by limiting the activities of social enterprises and by understanding social enterprise more broadly than just integration into the labour market. The European Commission's definition of social business is broader than what is stated in the Social Enterprise Law in Lithuania.

1.1. Factors Influencing Social Business

The law on social enterprises in Lithuania sets out the criteria that an organisation must meet in order to qualify as a social enterprise. The aim of such enterprises is to employ the target groups specified in the law - the economically inactive, those who have lost their ability to work, those who are unable to compete on equal terms in the labour market, to promote the return of these persons to the labour market, their social integration and to reduce social exclusion. According to Simanavičienė (2007), one of the main requirements is that the employees belong to a certain target group and that such employees must make up at least 40 per cent of the average annual number of employees on the rolls, and that there must be at least four such persons:

- "Disabled persons with disability group I, II or III, or with a severe or moderate disability, or disabled persons with a level of incapacity for work not exceeding 55%, or with a level of severe or moderate special needs (whether or not they are registered at the territorial labour exchange);
- long-term unemployed whose unemployment has lasted for more than two years from the date of registration with the territorial labour exchange.
- persons who are within five years of retirement pension age, if the duration of unemployment since the date of registration with the territorial labour exchange is more than one year.
- a mother or father, alone, who has the actual care and upbringing of a child up to the age of eight.
- if the duration of unemployment from the date of registration with the territorial labour exchange is more than six months.
- persons who have returned from imprisonment, where the period of imprisonment exceeded six months, have registered with the territorial labour exchange within six months of their release from correctional institutions, provided that the duration of this registration is at least six months" (Law on Social Enterprises, 2007).

Social enterprise status is mainly based on the condition of employment, and the law also contains existing restrictions on the activities that enterprises seeking this status cannot carry out. Thus, in Lithuania, social business is still perceived in law and regulation mainly in terms of job creation, and social business is equated with social enterprises, which are only partly in line with the global understanding of social business, and only one part of the initiatives to promote labour integration. It is worth mentioning that the Order of the Minister of Economy of the Republic of Lithuania on the Approval

of the Social Business Concept (adopted in 2015) has broadened the concept of social business, and thus the regulated understanding of social business in Lithuania has come closer to the understanding in the EU and in other countries. The Social Business Concept Ordinance (Gustas, 2015) states that "...social business is a business model that links the pursuit of profit with social goals and priorities, using the market mechanism, relies on socially responsible business and public-private partnerships, and applies social innovation. Social business encompasses three main dimensions: entrepreneurial (ongoing economic commercial activity), social (pursuit of social objectives) and managerial (limited profit sharing)."

In Lithuania, apart from the Law on Social Enterprises and the Social Business Concept, there are no other legal regulations or legislative framework or tax incentives for social business. Laužikas, Černikovaitė (2011) note that social business should not be given too much attention to obtaining financial support, but social business should dictate policy objectives. In Lithuania there are, as in other EU countries, various projects funded by the EU Commission aimed at promoting the development of social business (Erasmus + Strategic Partnership Projects, 2015). Like Dzemyda, Šalkauskas (2013) observes that the social business model can be applied to SMEs, community activities in rural areas, and as income diversification for NGOs. This is echoed by Maniokas (2014) who states that in the UK the social business sector brings huge value, with statistics showing that over 800,000 people are employed in such businesses, and that social business is more successful in times of crisis than traditional business. Statistics on the social sector also support the opportunities for social business development, with Moskvina (2013) reporting that in the EU, most of the government spending is in the social sector and one-in-four of established organisations in the EU is a social enterprise. Greblikaite (2012) adds that first of all, research and support from the government is necessary for social businesses to improve their activities, expand and thus lead to economic benefits for Lithuania.

Pranskeviciute (2011) recommends social business as an option for NGOs, stating that NGOs, which according to the author number of over 30,000 in Lithuania, find social business valuable for the following reasons:

- "Ghetto" syndrome.
- "Burnout", short-termism.
- Lack of competence and ideas.
- Low levels of partnership between organisations.
- Low public support (financial and non-financial);
- Non-commercial and commercial resources and revenues.
- Inflexibility.
- Focus on the most popular business areas.
- Lack of partnership with business.
- Too much concern about income.
- Lack of strategic and tactical planning.
- Closed off from the community.

Thus, the author's recommendation that many Lithuanian organisations should think about social business confirms the relevance of the topic. Finally, it can be noted that there is a need for the development of social business both in the rest of the world and in Lithuania, that the topic is new and topical, and that the opportunities are huge.

The development and growth of social businesses across Europe is hampered by several interrelated factors. Studies conducted by researchers (Černikovaitė, 2011; Dzemyda, Šalkauskas, 2013; Maniokas, 2013; Pranskevičiūtė 2011) allow us to distinguish between external and internal factors influencing the development of social business.

Not all of the above factors are equally applicable in all countries - some are more relevant than others, depending on the national and labour market situation. For example, access to finance is difficult and more problematic in countries such as the Netherlands and Denmark (where more than a third of social businesses do not have credit lines), compared to Switzerland where access to finance is not a particularly important issue (at least compared to EU Member States). Further empirical research could show the relative importance and impact of each factor for each country, type of social business and stage of development.

Other researchers (Pušinaitė et al., 2019) also distinguish between internal and external factors affecting social business. However, their assessment differs from those analysed before, as specific factors are identified. Internal factors include company performance indicators, the number of employees, quantitative indicators of company performance (e.g. employee salaries), specific changes in employees' working and social skills, changes in their emotional state, a safe working environment, and the use of idle resources. External factors include changes in the financial situation of the community, other local businesses, promotion of cooperation, changes in attitudes, efficient use of resources, impact on workers' families, reduction of pollution, promotion of entrepreneurial spirit, and changes in health status. This

is more relevant to the thesis research as it allows to specify the impact, to identify stakeholders, and to monetise the social activity, while interpreting possible behavioural changes. Therefore, the choice for further research is to reveal the impact of social business on the economy by calculating the benefits of social business.

It is also possible to identify positive and negative factors that influence social business. Negative factors include (Urmanavičienė, 2019) the lack of a unified methodology for social business impact, the complexity and complexity of important problems to be solved, the difficulties in planning for the future results of the enterprise, the susceptibility of groups of socially vulnerable people to social and economic challenges and risks (So and Staškevičius, 2015), the lack of qualifications or social skills, negative implementation assumptions, the lack of legal regulation, and the absence of a state attitude. Often the assessment of factors does not see the overall problem, and solving individual episodic problems does not always achieve the goal. The lack of comprehensive, systematic research on existing social business enterprises contributes to the scale of negative factors. In the financial market, social enterprises are subject to the same conditions as other enterprises.

Positive factors influencing social business include the support mechanism modelled by the state to promote social business, the emergence of methodologies for impact assessment, the public perception of the benefits of social business, the legal regulation of business, the creation of financial mechanisms to promote social business, and the strengthening of the social business sector (Jakubavičus, 2016). More about the factors influencing social business and the formation of favourable policies will be discussed in the following chapters.

Expressing the Impact of Social Business

Many authors analyse social business as a phenomenon and look at social business models without considering the impacts and benefits of social business. Scholars debate the benefits of social business. Yunus (2010) argues that social business would maximise social benefits. He argues that the failures of capitalism, commonly referred to as market failures, are conceptual failures related to the emphasis on people and their needs: it is usually a mistake to restrict human desires and aspirations to an exclusively economic sphere. However, he argues, the fundamental fact about people is their multiplicity. Social business seems to be an alternative to typical corporate organisations, given that it is different from the latter, which have profit maximisation as their main objective.

Social businesses face difficulties in measuring the benefits they create. This is common for traditional profit-seeking businesses, where it is possible to use tangible figures and rely on a range of financial indicators, but social business, according to Austin, Stevenson, Wei-Skillern (2006), must use sophisticated, and sometimes provisional, methods of calculation. They argue that in the social sector it is very difficult to measure impacts and outcomes and that even if methods are developed to measure outcomes, the real organisational impact is over the long-term. Traditionally, economic value has been assumed to be created by for-profit organisations, while social value has been assumed to be created by non-profit or non-governmental organisations (Maas, 2011). Given this belief, it is not surprising that social impacts are often not even included in evaluations or are ignored. Moreover, existing research focuses on the business case or payback results of corporate social initiatives rather than on the impact of social initiatives. In economic terms, the goal of economic behaviour is assumed to be the maximisation of wealth or profit, achieved by managing scarce resources in the best possible way. Efficiency measures the relationship between the results of a process and its costs. The higher the output of a given input, or the lower the input for a given output, the more efficient the activity, product or corporation. The common understanding of investment and return is based on the traditional distinction between social and economic value. Conventional performance measurement is often based on a goal-oriented approach and does not usually consider social or environmental issues. The assumption underlying the pursuit of purpose is that the objectives of the enterprise/state are identifiable and unambiguous. The effectiveness of the undertaking/state is demonstrated by the achievement or fulfilment of the objectives of the undertaking/state. Organisational objectives, such as increasing production, increasing profits or reducing costs, can be measured using conventional performance measurement techniques. The inclusion of societal impacts in the various dimensions of performance measurement - economic, environmental, social - makes it difficult to identify, measure and evaluate such impacts. While generally accepted financial accounting principles have been established to measure and report economic impact at the organisational level, comparable standards for measuring societal impact have yet to be developed. While it is common to distinguish between social and economic benefits, some scholars argue that it is not worth distinguishing between the two, with Santos (2012) recommending that value should be considered in terms of the total value created for members of society. Social business would undoubtedly attract even more interest if the value referred to by different stakeholders were calculated and quantified in a valid way. Private investors and government representatives would have a tool that would clearly demonstrate the value and impact, while at the same time providing more motivation to work on improving the conditions for social entrepreneurship, its promotion and public awareness.

As González (2017) argues, social value creation is linked to social impact. Other scholars (Gregori, P. (2019),

Jiao, H. (2011), Cohen, B.; Smith, B.; Mitchell, R. (2008), Kuratko (2016), Gordon (2018), Margiono (2018), Choi (2014)) point out that the creation of a positive economic, social, or environmental impact on society is considered as a prerequisite for social or sustainable entrepreneurship. However, there is a lack of consensus in the academic literature on the terms used and on the use of evaluation methods and measurement frameworks. Currently, researchers are confronted with many unclear concepts, tools and methods for purposes other than measuring the impact of social entrepreneurship. For this reason, a wide range of measurement approaches can be found in the scientific literature, considering the different characteristics, activities and objectives of organisations and the aspects to be measured (Grieco, 2015). Retolaza et al. (2016) classify performance measurement methods into five main categories: impact analysis, externalities assessment, economic evaluation, management improvements and rating systems. Integrating social impact into decision-making, planning and problem-solving processes requires an innovative and interdisciplinary approach.

Researchers (Akbulaev, 2019; Alvarez, 2019; Austin, 2006; Casado, 2017; Hysa, 2018; Yunus, 2010) mostly analyse the social benefits, or separately the economic ones. However, there is no need to separate these benefits, and therefore the thesis uses an integrated approach. Benefits consist of several components - social benefits (which result in reduced substance dependence, reduced unemployment benefits, as well as costs due to incarceration, crime, and arrests) and economic benefits. The aim is to show the overall impact - how much a euro spent generates in estimated economic benefits. The paper thus seeks to take a holistic approach by looking at the impact of social business through a socio-economic lens.

The cost-benefit approach used by the researchers highlights the benefits that society derives from the free services to promote entrepreneurship provided by social organisations in pursuit of their founding objectives, and from the management of the income and returns thus generated. To measure the benefits of social entrepreneurship, Hehenberger et al. (2013) have developed a frame of reference common to virtually all social impact measurement approaches, consisting of five steps: defining objectives, identifying stakeholders, assessing outcomes, evaluating impacts, and finally monitoring and presenting the results in a report.

According to Esteves (2012), social impact assessment is now understood as social problem-solving in development. She argues that there is a consensus on what constitutes 'good' social impact assessment practice - it is participatory; it supports affected businesses, advocates and regulatory agencies; it increases understanding of and responsiveness to change; and it seeks to avoid and mitigate negative impacts and maximise the positive benefits over the life cycle of change. It analyses the strengths, weaknesses, opportunities and threats facing social business evaluation. Social impact assessment requires a review of key concepts such as culture, community, power, human rights, gender, justice, place, resilience and sustainable livelihoods.

The social impact assessment methodology was originally intended as a methodology for assessing social impacts on the environment in the preparation of environmental impact assessment reports. However, social impact assessment methodologies are currently being applied by researchers (Gucku, 2002; Huda, 2016; Kiss, 2019; Mair, 2006) and practitioners (Borgazo, 2020; Bosma, 2018) to analyse and monitor processes, to project the social consequences of interventions, and to justify social development aspects.

According to researchers (Franks, 2011; Kemp, 2011; Vanclay and Esteves, 2011), some organisations and companies are using social impact assessment methodologies to evaluate their projects and to better identify social impacts. The business benefits of improved social impact assessment and management processes are now widely recognised (Esteves, 2012) and include:

- greater certainty of the project's investment and a higher probability of success.
- avoiding and reducing social and environmental risks and conflicts faced by industry and communities.
- Better ability to identify problems early and therefore reduce costs and avoidable costs by including them in feasibility assessments and project planning.
- improved planning of social and physical infrastructure.
- a process of informing and involving internal and external stakeholders and building support, trust and a mutually beneficial future.
- improved quality of life for workers and better attraction and retention of skilled workers;
- leaving a positive legacy beyond the project.
- increased competitive advantage through improved social performance and corporate reputation.

As Vanclay (2011) argues, social impact assessment is about how to manage the social problems associated with planned initiatives. In his view, social impact assessment is research and practice, a discourse, a paradigm or a sub-discipline in itself. Practitioners and scholars researching the field have an established knowledge of theory and methods, a wide range of tools, with accumulated practical experience, insights and a history of case studies. There is even an

International Association for Impact Assessment (IAIA, http://www.iaia.org), which provides practitioners and researchers with professional expertise and support in social impact assessment. IAIA is the leading international network of best practice in impact assessment for informed decision-making on policies, programmes, plans and projects. Its mission is to provide an international platform for the promotion of innovative approaches and the dissemination of best practices in all forms of impact assessment, with the aim of further developing local, regional and global impact assessment capacity. IAIA promotes integrated approaches to stakeholder engagement in impact assessment that meet the highest professional standards. The organisation believes that assessing the social, economic, cultural and environmental impacts of activities should be central to informed decision-making and to promoting equitable resource allocation and sustainable development. The organisation is committed to the principles of sustainable development, freedom of access to information and the right of citizens to participate in decision-making processes that affect their interests. The organisation believes that the impact assessment process should be comprehensive and integrated, taking into account a broader range of social and public health impacts, as well as all types of environmental impacts.

It is also important to distinguish the subjects of the impact assessment (see Figure 2).

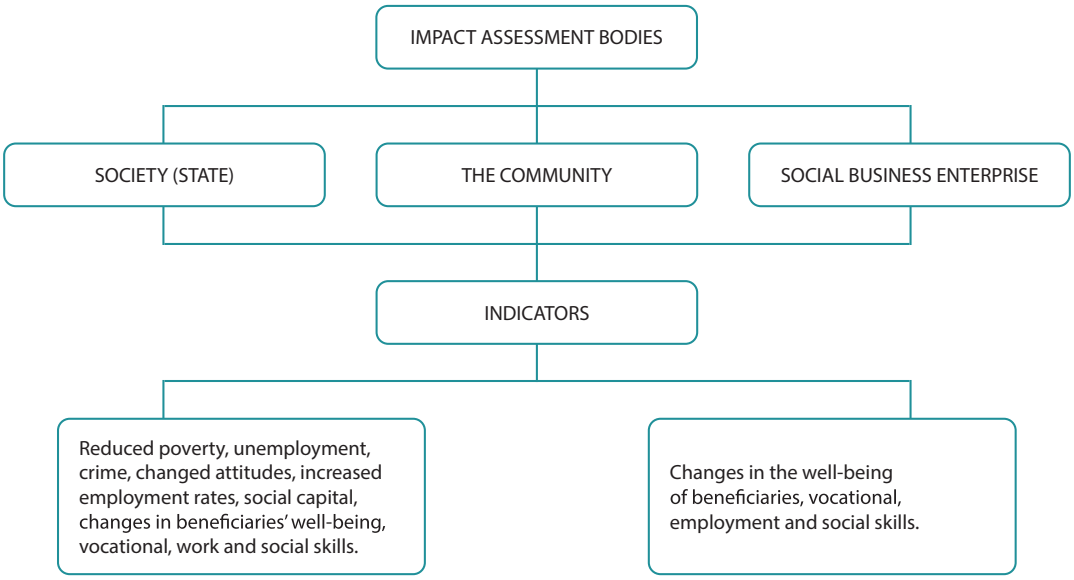


Figure 2: Impact Assessment Subjects

There are many different views on who should be classified as an impact assessment subject. Some scholars argue that it is necessary to distinguish between the actors responsible for the implementation of the whole process, including stakeholders (Noya (2015); Costa and Pesco (2016); Amati, Bengo et al. (2017)). For the sake of objectivity, scholars (Friedman and Miles, 2006) suggest that stakeholders working with target groups, such as NGOs, associations of vulnerable people, should be included among the subjects of impact assessment. It may also include public authorities, and the society or community in which social enterprises operate. There are also opinions (Urmanavičienė, 2019) that associations should be included as an entity that should carry out impact assessments. In the authors' opinion, it would be appropriate to distinguish three groups of entities when conducting an impact assessment of a social business, namely the society (with state institutions included), the community, and the social business enterprise itself, as the impact can be and is felt by all three of these entities. All the subjects of the impact assessment are reached through the reduction of poverty, unemployment, reduced crime, increased employment, changes in the well-being of the beneficiaries, and the enhancement of working and social skills. It should be stressed that social enterprises devote their resources and time to working with the target group, their needs and their family members. This leaves little time for other activities. Therefore, on the other hand, the authorities, society and the community and other stakeholders should ensure the implementation of the social assessment.

METHODOLOGY FOR MEASURING THE ECONOMIC IMPACT OF SOCIAL BUSINESS

The importance of social impact assessment is underlined by EU institutions, which state that social impact assessment is one of the components of social business development. However, the variety of forms and ways of operating social business does not allow for a single or a few social impact assessment methodologies. It is appropriate to examine the various methodologies for assessing the impact of social business and, following an analysis of these methodologies, to present the most appropriate ones for assessing the impact of social business. One of the methodologies for assessing the impact of social business is the Social Return on Investment (SROI) methodology. Table 3 provides a comparison of SROI with traditional economic valuation frameworks.

Table 3: Comparison of SROI with Traditional Economic Evaluation Systems

Cost-effectiveness analysis	Cost analysis	Cost-benefit analysis	Social Return on Investment (SROI)
Main objective			
Compare costs and impacts in the same area	Compare costs and impacts in the same area	Evaluate whether the initiative is worth the investment	Evaluate whether the initiative is worth the investment
Costs			
Monetary value	Monetary value	Monetary value	Monetary value
Benefits			
Benefits related to improving the environment	Benefits related to environmental improvements.	Describing the environmental impact	Environmental impacts are presented based on a "triple bottom line" approach (social, economic and environmental). In addition, it seeks to assess the potential negative impacts of the initiative
In natural units, e.g. jobs created or cases avoided	Reporting of acquired quality-adjusted events	Presented as a monetary value or welfare payment	Presented as a monetary value or welfare payment
		Listing advantages that cannot be readily monetised and explaining why they cannot be monetised	Uses financial proxies to estimate the monetary value of benefits cannot be easily monetised
Level of application			
International level	International level	Usually, international level	Initiative, project, programme, policy or organisation
Analysis time			
Retrospective or prospective	Retrospective or prospective	Retrospective or prospective	Retrospective or prospective
Discounting future value			
Yes	Yes	Yes	Yes
Stakeholder involvement			
No	No	No	Yes
Theory of Change			
No	No	No	Yes
Main result of the analysis			
Additional cost-effectiveness ratio	Additional cost-effectiveness ratio	Cost-benefit ratio (CNR)	Social rate of return on investment (SROI)
		Economic internal rate of return	Net present value
		Net present value	Payback period
		Turning point	
Interpretation of the main conclusion of the analysis			
Intervention with a higher cost-effectiveness ratio	Intervention with a higher cost-effectiveness ratio	CNS > 1 is a worthwhile investment	SROI > 1 is a worthwhile investment
Relevance			
Prioritisation and resource allocation	Prioritisation and resource allocation	Prioritisation and resource allocation	Prioritisation
			Resource allocation
			Building relationships with stakeholders
			Accountability system, management tool

Source: Banke-Thomas, et al, 2015

Table 3 shows that the frameworks traditionally used to calculate social impacts include cost-effectiveness analysis, cost-benefit analysis, cost-benefit analysis and social return on investment. More recently, however, the Social Return on Investment (SROI) methodology has been promoted as a more holistic approach to social impact assessment. Researchers (Nicholls, 2012) note that recent guidelines on SROI methodology define SROI as a framework for measuring and accounting for a much broader concept of value. It aims to reduce inequalities and environmental degradation, and improve well-being by incorporating social, environmental and economic costs and benefits. Vanclay (2011) points out that SROI is the process of understanding, measuring and reporting the social, economic and environmental value created by an activity, programme, policy or organisation. SROI can retrospectively measure outcomes that have already occurred (of the evaluative type) or prospectively predict what the value will be if the activity meets the expected outcomes. As Nicholls (2012) argues, data collection and subsequent analysis allow the calculation of cost-benefit ratios. He suggests that a ratio of 4:1 indicates that £1 invested in a social business investment delivers £4 in social value.

However, a negative outcome of the SROI methodology relates to the difficulty of linking financial values to "soft outcomes" and determining what would have happened without the counterfactual, as well as the poor extent of comparability of SROI between activities.

Researchers, practitioners and consultants are developing an improved (multi-disciplinary) methodology for impact assessment related to multiple value creation. The different approaches to social business impact are presented below (see Table 4).

Table 4: Methods for Measuring Social Impact

Social Impact measurement methods	Methods for measuring social impact
Acumen scorecard	Insights scorecard
Atkinsson compass assessment for investors (ACAFI)	Atkinson Compass Assessment for Investors (ACAFI)
Balanced scorecard (BSc)	Balanced Scorecard (BSc)
Best available charitable option (BACO)	Best Choices for Charity (BACO)
BoP impact assessment framework	BoP impact assessment framework
Centre for high impact philanthropy cost per impact	High impact philanthropy spending and impact ratio
Charity assessment method of performance (CHAMP)	Charity Performance Measurement Method (CHAMP)
Foundation investment bubble chart	Fund investment bubble chart
Hewlett foundation expected return	Metrics for expected return on Hewlett Fund investments
Local economic multiplier (LEM)	Local Economic Multiplier (LEM)
Measuring Impact Framework (MIF)	Measuring Impact Framework (MIF)
Millennium development goal scan (MDG-scan)	Millennium Development Goals scan (MDG-scan)
Measuring impacts toolkit	Impact measurement toolkit
Ongoing assessment of social impacts (OASIS)	Ongoing social impact assessment (OASIS)
Participatory impact assessment	Participatory Impact Assessment
Poverty social impact assessment (PSIA)	Poverty Social Impact Assessment (PSIA)
Public value scorecard (PVSc)	Public Value Scorecard (PVSc)
Robin hood foundation benefit-cost ratio	Benefit/cost ratio of the Robin Hood Fund
Social compatibility analysis (SCA)	Social Compatibility Analysis (SCA)
Social costs-benefit analysis (SCBA)	Social Cost-Benefit Analysis (SCBA)
Social cost-effectiveness analysis (SCEA)	Socio-economic efficiency analysis (SCEA)
Social e-valuator	Social e-assessor
Social footprint	Social footprint
Social impact assessment (SIA)	Social Impact Assessment (SIA)
Social return assessment (SRA)	Social Return Assessment (SRA)
Social return on investment (SROI)	Social Return on Investment (SROI)
Socioeconomic assessment toolbox (SEAT)	Socio-economic assessment toolkit (SEAT)
Stakeholder value added (SVA)	Stakeholder value added (SVA)
Toolbox for analysing sustainable ventures in developing countries	Toolkit for the analysis of sustainable enterprises in developing countries
Wellventure monitor	Monitoring good companies (monitor)

Source: adapted from Maas, 2011.

Businesses need quantitative methods to make intangible results more tangible, and to use social impact assessment for decision-making and monitoring. This list is not exhaustive, but it gives an overview of the main methods used to measure social impact.

Several approaches have been developed by non-profit or governmental organisations, such as Social Return on Investment (SROI), Ongoing Social Impact Assessment (OASIS), Social Cost-Benefit Analysis (SCBA) and Local Economic Multiplier (LEM). Other methods are mainly developed and used by for-profit companies. Examples include Social Return Assessment (SRA), Atkinson Compass Assessment for Investors (ACAFI), TBL, Measurement of Impact (MIF) and Best Available Charity Option (BACO). Although the approach was originally developed for organisations in a specific field, the approach has been used and adapted by other organisations. The use of SROI is a good example of this: originally developed for non-profit organisations, it is now increasingly being used by for-profit organisations.

There is a need for a variety of approaches tailored to the needs of different types of organisations and businesses, depending on their activities, objectives and the aspects of impact they want to measure. There is no single tool or method that can capture a wide range of impacts or that can be adapted by all organisations or enterprises. The multitude of existing methods for measuring social impact confuses managers when choosing a method or researchers when analysing progress in measuring social impact. Existing measurement methods do not reflect a common understanding of what to measure, why and for whom to measure or how to measure. Based on the analysis of the methods mentioned above, the characteristics and types of methods for measuring social impact are presented (see Table 5).

Table 5. Description of Methods for Measuring Social Impact

Characteristics		Types
Goal		Screening
		Monitoring
		Reporting
		Rating
Period		
		Perspective
		Available from
		Retrospective
Orientation		
		Input
		Output
Duration		
		Short-term
		Long-term
Perspective		
		Micro (individual)
		Mezo (organisation, company)
		Macro (society)
Approach		
		Process methods
		Methods of exposure
		Monetarisation

Source: adapted from Maas, 2011

As can be seen from Table 5 below, approaches can differ in the following aspects: purpose, timeframe, orientation, length of time, perspective and approach. In terms of purpose, impact measurement methods can be designed for different purposes, depending on what is intended to be measured. Certain methods are particularly suitable for (a) screening, (b) monitoring, (c) reporting and (d) evaluation. Screening methods facilitate the assessment of investment opportunities and their performance in the light of the specific social and financial objectives of investors. Monitoring methods support management by providing ongoing operational decisions and data for investor oversight. They can also help entrepreneurs identify business model modifications or market opportunities. Reporting techniques are particularly

useful for reporting to external stakeholders such as potential investors, the public or other entities that regularly require performance reports. Evaluation methods can be used for retrospective, ex-post assessment of achievements, not only for academic purposes but also for organisational learning.

When analysing methods by time period, different time periods can be used to evaluate methods. Some methods can be applied prospectively to assess impacts, for example, by answering what can be expected from planned reforms and programmes. These methods have the potential to open up a range of options, to support the design of measures and modifications, and to help decision-makers choose the most appropriate options (IPC 2008). Methods can also be developed with permanent or retrospective objectives in mind. Event-driven methods are useful for testing assumptions. Retrospective methods are useful for assessing past performance.

Based on orientation, methods can be input-oriented or output-oriented. Input-oriented methods are useful to assess input differences, such as cost savings from increased employee satisfaction from social activities. On the other hand, output-oriented methods are useful to measure output differences due to social activities, such as improved reputation.

In terms of duration, approaches can focus on the long or short term. More traditional measurement methods tend to focus on the short term. However, both short-term and long-term focus may be needed to assess social impacts. Impacts often do not occur in the short term; it can take a long time for social impacts to emerge. For example, the impact of global warming caused by greenhouse gases.

Measurement methods can use different perspectives based on perspective. Measurement methods originating, for example, in business evaluation, social science evaluation, policy or programme evaluation all use different perspectives. It should be noted that measuring social impact from a business or micro perspective involves different indicators than measuring social impact from a macro-socio-economic perspective (Maas, 2011). Depending on the perspective used, different indicators will be needed and therefore different impacts will be assessed. Thus, the perspective used is crucial for the measurement results.

Approaches can differ in their approach to social impact. The literature defines three broad categories of approaches: process, impact and monetisation (Franks, 2011). Process methods monitor the efficiency and cost-effectiveness of on-going business processes. In principle, they do not provide an absolute measure of social return. However, outcomes can be measured in terms of the extent to which they correlate with or lead to desired social outcomes. Impact approaches measure performance and its impact, i.e. the reference outcome over and above what would have happened if the organisation did not exist. Impact can be measured in several ways. There are methods that measure impact by linking corporate social performance and corporate financial performance (Kemp, 2011, Vaclay and Estaves, 2011). Another example of impact approaches is the so-called '3P approach', where economic aspects (profits), social aspects (people) and environmental aspects (planet) are measured in a single unit (Nicholls, 2012; IAIA2020). In addition, monetisation approaches describe social and environmental indicators and translate them into a monetary value for comparison with traditional financial data (Borgazo,2020; Bosma, 2018).

All methods are classified according to the above characteristics. The results of the social business impact assessment methods are presented in Table 6.

Table 6. Classification of Methods for Measuring Social Impact

Characteristics	Types	Social impact measurement method number (according to the numbering in Table 30)														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Goal	Screening	X	-	X	X	X	X	-	-	X	X	X	-	-	-	X
	Monitoring	X	X	X	X	X	X	-	-	-	-	X	-	-	X	X
	Reports	X	X	X	X	X	X	X	X	-	-	X	X	-	X	X
	Evaluation	-	-	X	-	X	X	X	X	-	X	X	X	X	X	X
Period	Perspective	X	X	X	X	X	X	-	-	X	X	X	-	-	-	X
	Available from	X	X	X	X	X	X	-	X	-	-	X	-	-	X	X
	Retrospective	-	-	X	X	X	-	X	X	-	X	X	X	X	X	X
Orientation	Input	X	X	-	X	X	X	X	-	-	X	X	-	X	X	X
	Output	-	-	X	-	-	-	-	X	X	-	-	X	-	X	-
Duration	Short-term	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Long-term	X	X	-	-	-	X	-	-	-	-	X	-	-	-	X
Perspective	Micro (individual)	-	X	-	-	X	X	X	X	X	X	-	-	X	X	X
	Mezo (organisation)	X	X	X	X	X	-	-	-	-	X	X	-	X	X	-
	Macro (society)	-	-	X	X	X	X	X	X	X	-	X	X	X	X	X

Characteristics	Types	Social impact measurement method number (according to the numbering in Table 30)														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Approach	Process methods	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Methods of exposure	-	-	O	-	X	-		-	-	-	X	O	-	X	X
	Monetarisation	-	-	-	X	-	-	-	-	-	X	-	-	X	X	-
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Goal	Screening	X	-	X	X	X	-	-	X	X	X	-	-	-	X	-
	Monitoring	-	X	-	X	-	-	X	X	X	X	X	X	-	X	-
	Reports	X	X	X	-	X	X	X	X	X	X	X	X	-	X	X
	Evaluation	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X
Period	Perspective	-	X	X	X	X	-	-	X	X	X	-	-	-	X	-
	Available from	-	X	X	X	X	-	X	X	X	X	X	X	-	-	-
	Retrospective	X	-	X	-	X	X	X	X	X	X	X	X	X	X	X
Orientation	Input	X	X	-	X	X	X	X	-	X	X	X	X	-	X	-
	Output	-	-	X	-	-	-	-	X	-	-	-	-	X	-	X
Duration	Short-term	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-
	Long-term	X	-	X	-	X	X	-	X	-	-	-	-	-	X	X
Perspective	Micro (individual)	X	-	-	-	-	-	X	X	-	X	X	-	-	X	X
	Mezo (organisation)	-	X	-	X	-	-	-	X	-	X	-	X	X	X	X
	Macro (society)	X	X	X	X	X	X	O	X	X	X	O	X		X	X
Approach	Process methods	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Methods of exposure	X	-	X	-	X	-	O	-	X	-	O	-	-	-	-
	Monetarisation	-	-	X	-	X	X	X	-	-	X	X	-	X	O	-

Source: adapted from Maas, 2011.

Table 6 shows the characteristics of the different methods to facilitate understanding for which purpose the different methods (sampling, monitoring, reporting and evaluation) can be used. The table below shows the timeframe, orientation, duration and perspective chosen by the methods. Finally, the approach taken by the methods can be observed. Almost all of the thirty methods can be used for different purposes. More than half of the methods (17/30) serve a selection purpose, facilitating the assessment of investment opportunities or performance in the light of the investor's social and financial objectives. A similar number of methods (18/30) can monitor social impact. In almost half of the cases (12/30), the two objectives overlap - monitoring and verification. A much more important objective of the methods used to measure social impact is reporting (24/30), which shows that social impact assessment is regularly motivated by the need to report to external stakeholders. Finally, the most important objective of social impact methods (25/30) is evaluation.

The above classification of methods shows that, despite the large number of social impact methods that have been developed, only eight out of thirty methods measure social impact, while four methods can partially measure social impact. Many methods focus on inputs rather than outputs. While most methods are useful for reporting, almost none is specifically designed for reporting purposes. Except for three methods, all are useful for assessing impact. Only one method - the Hewlett Foundation Expected Return - is limited to a purely predictable time and is therefore only useful for verification purposes. All methods use a process approach. In addition, 11 methods have been developed for translating all impacts into monetary units. All the methods that aim to measure impact have a macro-societal perspective. All methods are designed to capture short-term impacts, whereas only 12 methods can capture long-term impacts.

The wide range of methods for measuring social impact makes it difficult for researchers to choose the right method for measuring social impact. Part of the difficulty stems from the lack of consensus on the definition of social impact. However, the challenges are mainly due to the lack of a classification system for these methods. While all the methods identified were specifically designed to measure social impact, the study shows that only eight of the thirty methods do so. All these methods are based on a macro-societal approach. Given the growing interest in measuring social impact, researchers (Pučetaitė, 2019) are also looking at how social business itself perceives the impact of its activities. In this case, economic, social, environmental and cultural impacts are distinguished. The economic impact of the business is perceived through the performance of the company, quantitative indicators of the company's performance (e.g. employees' salaries), the change in the financial situation of the community, the use of efficient resources, and the development of regions.

The guidelines approved by the Minister of Agriculture of the Republic of Lithuania (Guidelines for applicants submitting applications under the measures of the Lithuanian Rural Development Programme 2014-2020, 2017) foresee that the anticipation (planning), monitoring and measurement of social impact is a prerequisite for a well-functioning and purposeful social business. For this purpose, a spreadsheet has been developed with the main objective of measuring positive social impact, where quantitative and qualitative criteria are foreseen and evaluated in order to predict and/or determine whether a specific social business has had and/or will have a positive social impact on society or a group of society. The spreadsheet itself is in Excel format. The main indicators of social impact of the spreadsheet are set out in the Social Impact Measurement Spreadsheet. In the spreadsheet, the completer has to select the following elements:

1. Activity
2. Field in which activity takes place
2.1 Purpose of the action
2.2. Sub-objective
3. Target groups or groups of people suffering from a particular disease/disorder
4. Indicator to measure achievement of the objective
4.1. Type of indicator
4.2. Information topics/services
4.3. Capacities/competences
4.4. Separate calculation methodology for the additional indicator
5. Calculation method
5.1. Frequency of calculation
6. Size of the selected target group (number of persons) at the location of the activity (village, district, etc.)

For most criteria, selections need only be made from the drop-down options in Excel - such as performance targets or sub-objectives.

Possible operational objectives:

1.1. Reduce poverty.
1.2. Promote employment.
1.3 Reduce social exclusion and promote social inclusion.
2.1 Promote interest in healthy lifestyles.
2.2 Promote physical activity.
2.3. Improve physical and mental health.
3.1. Promote crime prevention.
3.2 Reduce the consumption of psychotropic substances and alcohol.
3.3. Promote disease prevention.
4.1 Encourage/contribute to skills development, acquisition of competences.
4.2. Improve learning infrastructure.
4.3 Promote tolerance and citizenship.

Sub-objectives are also set for each objective, and applicants can accordingly choose from the sub-objectives already listed in the Excel table:

1.1.1. Reduce poverty.
1.1.2. Reduce the income dependency of certain target group families/individuals on social benefits.
1.2.1. Increase the employment of people belonging to the target group.
1.2.2. Encourage entrepreneurship among the population/people at risk.
1.2.3. Increase the match between the skills of the labour force and labour market needs.
1.3.1. Reducing social exclusion.
2.1.1. Raise awareness of healthy lifestyles, hygiene.
2.2.1. Increase physical activity among individuals
2.3.1. To improve physical and mental health.
3.1.1. Prevent crime and improve environmental safety.
3.2.1. Reduce the dependence of the population/target group on psychotropic substances, alcohol and carry out prevention activities.
3.3.1. Reduce and prevent the incidence of disease in individuals.
4.1.1. Enhance opportunities/facilities for acquiring competences/developing competences.

4.1.2 Increase attendance at classes and lessons and promote/implement non-formal education.

4.2.1. Improve learning infrastructure by creating favourable conditions (e.g. incentive system) / access to it.

4.3.1. To promote tolerance and citizenship among individuals.

Applicants are further instructed to fill in the table with the figures used for the automatic calculation of the impact, i.e. how much has been achieved in each year (a (t-th) and b), where the size of the target group is used to calculate the impact achieved by year for each row, e.g.: 2021. The impact is calculated automatically. The applicant has to enter the values in the formula (a; b; a(t-1)).

One of the main advantages of the spreadsheet is that it is built on the well-known Excel program.

It is also convenient that many of the items can be selected from a list. However, for some specific activities, this can also be a limitation. The formulas are already in the software, and the user does not have to do any calculations. At the very beginning, a short instruction is given explaining the steps to be followed in the spreadsheet.

The calculator has some limitations - it is aimed at LEADER project applicants and is therefore not widely used, and its relevance is limited by the fact that the project is different from the business. Certain parts of the calculator are difficult to understand, requiring the use of additional data sources and the size of the target group. It also relies on perspective rather than real data, which makes it difficult to check the realism of the figures entered. For these reasons, the calculator is not suitable for assessing the economic impact of social business.

The creation and adoption of the calculator through legislation was an important step towards the proper measurement of impacts but is not sufficient due to the limitations and difficulties already mentioned.

Despite the plethora of social impact methodologies, researchers (Jakubavičius A, 2016; Maas, 2011; Policy Brief, 2015) point out that "...the most common social impact methodologies are: cost-benefit analysis. This methodology is commonly applied in labour integration social enterprises and aims to assess the benefits that the activities of such enterprises provide to public entities and to individuals whose employment opportunities are limited (e.g. persons with disabilities). This methodology is based on an assessment of the costs incurred and the results they generate and is more focused on the evaluation of financing mechanisms. The deeper social context is usually not touched, but often a welfare index is considered. The evaluation can be carried out at two levels: (a) cost-benefit analysis at organisational level; (b) cost-benefit analysis in relation to each eligible (e.g. disabled) person recruited. The results obtained are useful for assessing the performance of social business enterprises and the effectiveness of the use of the funding allocated to them. The drawbacks of the methodology are the volume of information to be obtained and processed, the fact that not all social enterprises are able to carry out the analysis independently, and the fact that it does not address some of the important externalities (social capital produced, benefits to the family of the disabled person, etc.).

Rating-based methodology. This methodology aims to assess the efficiency and performance of different social businesses. It is much more comprehensive than the cost-benefit analysis methodology and considers the specificities of each type of business. The methodology is based on the premise that social business should be reflected through financial benefits and social objectives. The methodology is attractive to private investors due to its separate focus on the assessment of financial performance. The following categories are analysed and evaluated in detail: market position, operating costs, adequacy of solutions, social effectiveness, social innovation.

Social accounting and auditing. This methodology is based on assessing the impact on social groups. It also helps social businesses themselves to identify the needs of their target groups. At the same time, it assesses the effectiveness of the social business itself and takes more account of the needs of different stakeholders (the previous methodology considered the needs of funders). This methodology is widely used in the UK. It has even established the Social Audit Network, a non-profit organisation that promotes the exchange of information and experience on the practical application of social accounting and auditing in measuring social impact/benefit. It also certifies social auditors".

The three social impact assessment methodologies have been analysed in terms of basic principles, scope, advantages and disadvantages (see Annex 1)

The analysis of social business impact methodologies leads to several observations:

Social business impact methodologies are very abstract, as they do not provide quantitative or qualitative indicators to measure the economic benefits of social business.

The wide range of methods for measuring social impact makes it difficult to choose the right method for measuring the social impact of activities. Part of the difficulty stems from a lack of consensus on the understanding of social impact. However, the challenges are mainly due to the lack of a classification system for these methods.

Researchers identify several structures, classification schemes and conceptual frameworks. However, the focus is on environmental accounting.

While all the methods shown were specifically designed to measure social impact, the study shows that only eight of the 30 methods do so. All these methods are based on a macro-societal approach.

Impact Assessment and Cost-benefit Analysis

Cost-benefit analysis is a key method of economic analysis that identifies and evaluates the economic impact of certain measures or initiatives by assessing direct and indirect economic costs and benefits (Boardman et al., 2011; Cordes, 2012). These economic costs and benefits are expressed in monetary terms. In this way, the net benefits of an initiative can be evaluated by comparing different alternatives to each other. The aim of cost-benefit analysis is to determine whether an initiative brings benefits to society and whether it is needed. Cost-benefit analysis is also useful in that it provides a unified methodological framework for assessing the impact of a particular initiative in different dimensions (Commonwealth of Australia, 2005). Impact assessment of various initiatives seeks to answer the key questions that arise in public policymaking: what means are available to achieve the objectives and why, and how much does it cost? The data obtained on the actual impact of a given initiative and the costs and benefits of its implementation allows for the selection of better policy instruments. Impact assessment is also useful for reporting to citizens on the consequences of government action, the appropriateness of public support, etc. (Schober, Then, 2015).

Rotz D., Maxwell N., Dunn A. (2015) used a cost-benefit approach in a study-report supported by the Social Innovation Fund (which combines public and private resources to increase the impact of innovative, community-based solutions with compelling evidence for improving the lives of people in low-income communities across the U.S.) and the Corporation for National and Community Service programmes. The study sought to assess the impact of the social businesses involved in the project. Their joint project was based on a five-year strategy to transform the lives of people with barriers to employment by helping them enter the labour market. The businesses involved in the study had a mission focused on employing and otherwise assisting such people.

The cost-benefit analysis identifies the groups in society that have submitted initiatives and the groups affected by the initiative, and the consequences that these groups have experienced. The positive consequences or *economic benefits* of an initiative are measured as the increase in the well-being of the society or its groups because of the implementation of the planned initiative. The negative consequences of an initiative are the *economic costs or* resources consumed by the initiative or the costs incurred as a result of the implementation of the initiative (Weimer, Vining, 2014)

In a cost-benefit analysis, it is important to determine how a proposed initiative has affected income, housing, health, safety, etc. - the things on which people's well-being depends. It is also important to explain *why* these impacts have been achieved, i.e. the causal links must be explained. Almost all initiatives are linked to cash flow. Cash flow reflects how much money is received and how much is spent during each period of the initiative. *Net cash flow* is determined by subtracting cash inflows from cash outflows. If cash receipts exceed cash outlays, the net cash flow is positive, and if cash receipts are less than cash outlays, the net cash flow is negative. The net cash flow is determined on an annual basis, over the lifetime of the planned initiative.

The further in the future the benefits or costs are generated, the less important or valuable they are, because consumers would prefer to consume the same volume and quality of the good now rather than in a year or a few years. Moreover, according to the value of money principle, a euro received in a year's time is not worth as much as a euro received today, since a euro received today can be invested and be worth much more a year later.

As cash flows are generated at different points in time during the life of the initiative, cash receipts that will be received in the future or cash outlays that will be incurred in the future should be discounted (Boardman et al., 2011).

Thus, the present (discounted) value of future cash is calculated by applying a discount factor:

$$k = \frac{1}{(1+i)^n} \qquad (1)$$

where k is the discount factor; i is the discount rate; n is the year.

The social discount rate is commonly used to evaluate public initiatives. The discount rate is very important in the evaluation of initiatives, as a low discount rate may make an initiative economically viable, while a high discount rate may not make an initiative economically viable. Some authors suggest that a discount rate corresponding to the interest rate of Eurobonds issued in the name of the State is usually used for discounting public initiatives (Gargani, 2017). Other authors suggest using the social discount rate (SDR), which reflects the public's attitude towards assessing the future benefits and costs of the initial investment. The diversity of approaches raises more questions, and after analysis and synthesis of scientific and methodological literature, the recommended SDRs vary from 0 to 8% (Baranauskienė, Aleknevičienė, 2014; Gargani, 2017).

The key indicator for cost-benefit analysis is net present value. Other methods of comparing and evaluating initiatives may be used: internal rate of return, payback period and benefit-cost ratio. Several evaluation methods are used to increase the reliability of the decision to implement a particular initiative.

The present value of cash flows is calculated by discounting the net cash flows:

$$DV = \frac{BV}{(1+i)^n} \quad (2)$$

where *DV* is the present value; *BV* is the future value; *k* is the discount rate; *n* is the year.

The net present value is calculated according to the formula:

$$GDV = \sum_{t=0}^{n} PS_t x k_t = \frac{PS_0}{(1+i)^0} + \frac{PS_1}{(1+i)^1} + \cdots + \frac{PS_n}{(1+i)^n} \quad (3)$$

where *NPV* is the net present value; *CF* is the cash flows; *k* is the discount factor; *i* is the discount rate; *n* is the last year of the period; *t* is the number of years since the decision was taken.

The choice of the discount rate determines the size of the GDV. If a positive NPV (>0) is found for the implementation of the initiative, this means that the proposed initiative generates a net benefit for society or groups of society. The NPV indicator allows a comparison of several alternative initiatives and the selection of the best one. The alternative with the highest NPV is usually chosen. However, in the case of public initiatives, if it is not possible to accurately calculate the benefits and costs involved, additional indicators can be used to compare the initiatives. It may be the case that a proposed initiative generates higher intangible net benefits that cannot be quantified, so that a negative NPV is not a valid reason to abandon an initiative (Schober, Then, 2015).

Another important indicator for evaluating and comparing initiatives in cost-benefit analysis is the internal rate of return.

When it is difficult to determine the appropriate discount rate, internal rates of return (IRRs) are a useful indicator of the effectiveness of an initiative.

The NPV is the discount rate at which the present values of future costs are equal to the present values of future revenues, i.e. the NPV of the initiative's net cash flows is 0.

The ABM is determined by:

$$GDV = \sum_{t=0}^{n} \frac{PS_t}{(1+VGN)^t} = \frac{PS_0}{(1+VGN)^0} + \frac{PS_1}{(1+VGN)^1} + \cdots + \frac{PS_n}{(1+VGN)^n} \quad (4)$$

where *NPV* is the net present value; *IRR* is the internal rate of return; *CF* is the cash flow; *k* is the discount factor; *i* is the discount rate; *n* is the last year of the period; *t* is the number of years from the start of the decision.

Another important indicator for cost-benefit analysis is the payback period. The payback period reflects the number of periods needed to cover the initial monetary cost of the initiative. In other words, the payback period is the time (in years) during which the benefits generated by the initiative cover the initial costs, i.e. when the net cash flow is greater than zero (>0).

The payback period is calculated as:

$$AL = n_{pp} \times \frac{\sum_{t=1}^{n} PS_t}{PS_a} \quad (5)$$

where *AL* is the payback period; is the year before full recovery; is the cash flow at the end of period t; is the sum of the net flow in the year of full recovery; *t* is the number of years from the start of the decision. The shorter the resulting payback period, the more attractive the initiative, other things being equal. However, the payback period indicator has an important limitation as the net cash flows are not discounted. Moreover, the payback period indicator does not reflect cash flows generated after the payback period, i.e. it ignores the subsequent consequences of the initiative. Also, the payback period indicator allows for the measurement of time, but not the value generated by the initiative. It is therefore necessary to complement the payback time analysis with other valuation indicators (NPV and NPV) or to use the payback time as a constraint when deciding whether to implement a particular initiative (Schober, Then, 2015).

The most important criterion for evaluating initiatives is the benefit/cost *ratio* K/S.

The benefit-cost ratio is determined by:

$$\frac{N}{S} = \frac{\sum_{t=0}^{n} DV_{Ip}}{\sum_{t=0}^{n} DV_{Iš}} \quad (6)$$

where is the benefit-cost ratio; is the cumulative net revenue in present value terms over period n; is the cumulative net cash cost in present value terms over period *n*; and *t* is the number of years since the decision was taken.

If the K/N value of an initiative is set above unity, the initiative is considered acceptable because its benefits (as measured by the aggregate present value of net revenue) are greater than its costs (as measured by the aggregate present value

of net costs). The higher the value of the K/N ratio, the higher will be the value of the alternative under consideration.

In order to successfully assess the benefits of an initiative such as social business, it is important to assess the risks involved and the possible consequences in advance. Several approaches can be used to assess risk, depending on the complexity of the decision to implement a particular initiative.

The main method of risk assessment is sensitivity analysis. It reflects how the results of a cost-benefit assessment respond to changes in key indicators (e.g. discount rate, inclusion or exclusion of certain costs, etc.) or other changes. The parameters whose changes have the greatest impact on the results of the initiative are called critical. It is recommended to focus on those parameters or critical parameters where a one percentage point change in absolute terms results in a one percentage point change in NPV (Yates, Marra, 2017).

The sensitivity analysis allows us to answer two important questions: whether the initiative would still be worth implementing if some of the key assumptions were not valid. Whether there are ways to mitigate the risks before a specific initiative is implemented. Sensitivity analysis involves several steps.

First, variables are identified, such as price (real wages, etc.), demand (population, etc.), investment (hourly labour costs, etc.), quantitative or qualitative parameters of the benefits (health improvement rate, etc.), discount rate, etc. It should be noted that the parameters to be analysed must be independent of each other, and that it is therefore necessary to eliminate interdependent variables. Once the relevant variables have been selected, the elasticity of their effect is assessed, i.e. the change in the relevant variables is analysed to see how the change in the significant variables affects the change in the GDV or the VGN (Nicholls, 2017).

When assessing the economic impact of social business, it is important to distinguish its impact from that of other externalities and to measure how and to what extent welfare has changed because of social business rather than other factors. Once the impact of a social business has been assessed, it is essential to monetise the welfare change, i.e. to measure costs and benefits in euro and to compare costs and benefits to determine whether the social business has increased or decreased the welfare of those employed by the business, the social businesses and other entities or groups.

Counterfactual analysis is a quantitative method for assessing net impacts. It seeks to compare the actual consequences with what would have happened in the absence of the proposed initiative (counterfactual). The aim of this analysis is to assess and calculate the net impact of an initiative.

Ideally, the welfare of the same entity (individual, business, society) should be compared in two different situations: with and without the initiative. Such a comparison would solve the two main problems of net impact assessment: it would compare the same entity, with identical characteristics and unaffected by other externalities. This is known as the ideal counterfactual situation.

As the same subject cannot be a member of both the treatment and control groups at the same time, in practice, comparisons are based on one of the following approaches (Rotz et al., 2015): a comparison between the control and experimental groups, which aims to control for extraneous factors and to establish causal links between the initiative and the consequences of implementation. The aim is to test what would have happened to the target groups if the initiative had not been implemented at all. The comparison groups are chosen to be identical in all other relevant respects, except that the control group did not experience the effects of the implemented initiative (Rotz et al., 2015).

Comparison of the same group "before and after the initiative". Comparison of the same group before and after the initiative. The data collected on this group before the implementation of the initiative is called the control group. During the evaluation, they are compared with data collected on the same group after the initiative. In most cases, a 'before-after' comparison is carried out when: a) the target group includes the whole or a very large proportion of the population; b) the absence of influence of other significant external factors is assumed. On the other hand, such comparisons are often not reliable as the latter assumption is usually not correct.

There are several methods of counterfactual analysis:

1) Random selection.

2) Double difference analysis.

3) analysis of the most similar cases.

The first type of counterfactual analysis uses experimental methods, the others non-experimental methods.

The most appropriate approach would be to use experimental methods, but experimental methods are expensive and have important limitations and drawbacks. The experimental group may include subjects who have left the group before the initiative has finished or even started. In addition, experiments are costly in terms of money and time and often raise ethical issues. Also, in the case of a randomised experiment, it is necessary to plan the monitoring process in advance and to ensure that the environment in which the experiment takes place remains unchanged, which is very difficult to achieve when dealing with complex problems (Boardman et al., 2011).

It is important to note that when assessing the net impact of an initiative, it is not appropriate to compare the characteristics of the same target group before and after the initiative. This difference does not reflect the true impact of

the initiative, as it is not known whether the visible results after the initiative would not have occurred in any case, i.e. even without the initiative. Thus, it is not possible to determine with certainty the impact of the independent variables on the dependent variable (the characteristic it measures). In order to avoid this error, control groups are included in the counterfactual analysis. The net effect of the initiative is calculated by comparing the differences in the change in the attributes (characteristics) of the target and control groups (Rotz et al., 2015).

This analysis is based on calculating the double difference between the characteristics of these groups. It calculates the difference in trait change over time (before and after the initiative) and the difference in trait change between the different groups (i.e. between the target group of the initiative and the control group). Such a comparison is only possible when data on the situation before and after the initiative are available.

It is important to stress that it is not sufficient to assess only the differences in the characteristics measured between the target group and the control group after the implementation of the initiative. A visible difference does not necessarily reflect the impact of the initiative, as it may have been caused by other external factors. Moreover, differences between groups may have existed before the implementation of the initiative. Selection bias can be eliminated if data are available on the characteristics measured by the target and control groups *before* the implementation of the initiative. With such data, the net effect of the initiative is estimated by taking the difference in the mean difference in the characteristics of the two groups being compared *before* the implementation of the initiative and subtracting the difference in the mean difference in the characteristics of the two groups after the implementation of the initiative (Rotz et al., 2015):

$$P_G = \Delta s1 - \Delta s2 \quad (7)$$

$$\Delta s1 = C_{G1} - C_{NG1} \quad (8)$$

$$\Delta s2 = C_{G2} - C_{NG2} \quad (9)$$

Where: *P(G)* is the net effect of the initiative Δs1, is the difference in the mean of the compared characteristic between the two groups **before** the implementation of the initiative, *CG1* is the estimate of the mean of the characteristic of the target group **before** the implementation of the policy, *CNG1* is the estimate of the mean of the characteristic of the control group **before** the implementation of the policy, Δs2 - the difference in the mean difference in the characteristics between the two groups **after** the implementation of the initiative, *CG2* - the mean estimate of the target group characteristic **after** the implementation of the initiative, *CNG2* - the mean estimate of the control group characteristic **after** the implementation of the initiative.

The assessment of the double difference involves the following steps (Rotz et al., 2015): defining the indicators, defining the time period, assessing the characteristics of the target and control groups, and assessing the counterfactual.

The first step highlights the manifestation of the initiative's effects and identifies the indicators that will allow change to be quantified.

The next step is to define the evaluation period. Ideally, the evaluation period should cover an equal number of years before and during the implementation of the initiative.

In the third step, the averages of the characteristics of the two groups to be compared and their difference in the two time periods are determined. Table 7 gives an example of the calculation of the double difference with formulas.

The fourth step aims to eliminate the influence of extraneous factors, as the double-difference approach assumes that the extraneous factors have the same effect on the two groups being compared. Additional data are needed to test this assumption. If the analysis included data from even earlier periods before the implementation of the initiative (e.g. 2008-2018), it could be verified that the change in the characteristics (e.g. income) of the two groups before the implementation of the initiative was uniform.

In the final step, a panel data analysis is carried out to test the effects of other potentially significant variables and their changes over time. This also allows for a comparison of whether other significant changes have occurred during the lifetime of the initiative that may better explain the differences observed between the two comparison groups than participation or non-participation in the ongoing initiative.

The analysis of the most similar cases provides an additional way to determine the net benefit of the initiative by comparing the most similar cases, which are selected based on their observable characteristics. This analysis assumes that it is possible to assess all relevant characteristics of the target and control groups and to select a control group that is as similar as possible to the target group. Ideally, the two groups should only differ in one aspect: whether they participated in the initiative. The net effect of the policy would then be the difference between the average estimates of the characteristics of the two groups (e.g. income, employment, etc.)

To determine which groups to compare, a similarity estimate is calculated *(*Maxwell et al., 2013). The similarity estimate is the probability that a sample unit with characteristic X in the target and control groups is in the target group. The similarity estimate (p) falls in the range from zero to one: $0 < p < 1$.

It is calculated by a logistic or probabilistic regression with a dichotomous variable D (where D = 1 is assigned to cases from the target group (participated in the initiative) and D = 0 is assigned to cases from the control group (did not participate in the initiative). The similarity estimate is calculated according to the formula:

$$P_{(x)}=P_r\{D = 1|X = x\} \quad (10)$$

Where *P(x)* is the similarity estimate, *D* is the dichotomous variable, *X* is the characteristic of the sampling unit of the target and control groups.

The analysis of the most similar cases is characterised by the selection of a control group and the use of a difference-in-differences approach, which is like a random selection method. The main difference between a case-by-case analysis and an experiment is that in experimental methods, subjects are randomly assigned to a target and a control group, whereas in a case-by-case analysis, the assignment to the two groups is based on the observable characteristics of the groups.

TRANSFORMING SOCIAL BUSINESS

The Development of Social Business in Europe

In recent years, there has been a surge of interest in social business across Europe, driven strongly by the growing role that social businesses can play in addressing societal and environmental challenges and promoting inclusive growth. There is also momentum from the global economic crisis of 2009, which triggered widespread public discontent with the functioning of the global economic system and stimulated interest in more inclusive and pluralistic economic systems. The subsequent implementation of austerity measures in the context of new and growing social needs has created challenges and opportunities for social business in Europe. Despite the interest in and emergence of examples of inspiring and disruptive social enterprises, relatively little is known about the scale and characteristics of the emerging pan-European social enterprise 'sector'.

Today, many European countries have given legal or official recognition to the concept of social enterprise. According to EU research (A map of social, 2015), 20 out of 28 countries (see Table 8) use a formal or informal but widely accepted definition (or criteria) of social enterprise. In six countries, the concept of 'social economy' or 'social and solidarity economy' is more common. However, in these countries it is possible to find an official definition of a "social economy entity", which has many similarities with the definition of a social business - social enterprise.

There is a growing consensus within and between countries on the common characteristics that define a social enterprise, i.e. an independent organisation that combines social purpose with entrepreneurship. Despite the trend towards convergence, it is important to recognise that national definitions and concepts differ. The main areas of difference are:

- There are very few terms that use the entrepreneurial dimension of social business. For example. The Czech Republic specifies that at least 10% of a social enterprise's revenue should come from market sources. The United Kingdom specifies that a social enterprise should derive at least 25 per cent of its income from trade. The Italian Social Enterprise Law (Law 155/2006) stipulates that a social enterprise must derive at least 70 per cent of its income from business. In Croatia, at least 25 per cent of a social enterprise's income should come from entrepreneurial activities three years after its establishment.
- The interpretation of the social purpose varies from a narrow focus on labour mainstreaming (e.g. the concept of social enterprise as set out in Finnish, Lithuanian, Polish, Slovakian and Swedish national laws and policy documents) to broader societal and environmental objectives, including areas such as renewable energy and fair trade (e.g. UK, Greece).
- While most definitions explicitly prioritise social over commercial objectives, there are some exceptions (e.g. Czech Republic, Latvia, Lithuania).
- Some national definitions imply a full restriction on the distribution of profits (e.g. Italy, Poland), while most other definitions imply a partial restriction on the non-distribution of profits (e.g. Finland, UK). In addition, some national definitions do not consider the reinvestment of profits to be an essential feature of social enterprises (e.g. Lithuanian Law on Social Enterprises).

Table 8. Comparison of National Concepts of Social Business with the Main EU criteria for Defining Social Business

Country	Source of the concept	Links to the definition of social business
Austria	The term "social enterprise" is not used very often in the Austrian context, either in research or in public or professional discourse. The most used German terms are "social economy", "social integration enterprises", "public benefit organisations" and "cooperatives".	Austrian policy makers still tend to think of social enterprises as only related to labour integration social enterprises, which have long been the flagship of Austria's active labour market policy. In recent years, there has been an increased interest in social enterprises within the Ministry of Economic Affairs, but in this case the interest is focused on the wave of social start-ups. Thus, there is no consensus in Austria on what constitutes a social enterprise and, more specifically, on where the boundaries of the concept should be defined.
Belgium	Definition of a social purpose enterprise (transversal social purpose enterprise statute).	The perception fits exactly the definition of a social business, except that Belgian law does not impose any specific governance obligations on social purpose enterprises. The governance model of a social purpose enterprise under Belgian law depends on the main legal form (cooperative or public limited company).
Bulgaria	The National Concept Note on the Social Economy (2012) provides criteria for identifying a 'social economy enterprise'/'social enterprise'.	The criteria developed by the Bulgarian government to identify social enterprises do not explicitly state that the social objective takes precedence over other objectives. While autonomy and independence from public authorities is a requirement, the criterion is not so broad as to define organisational autonomy from for-profit enterprises.
Cyprus	No official definition.	
Croatia	Draft Strategy for the Development of Social Entrepreneurship in the Republic of Croatia 2014-2020.	The draft strategy emphasises the balance between the social, environmental and economic objectives of the social enterprise. While the concept emphasises the high degree of autonomy and independence of the business from the state or public authority, it does not explicitly refer to organisational independence from the for-profit enterprise.
Czech Republic	Informal but widely accepted definition developed by the Thematic Network for the Development of Social Economy (TESSEA) (2011).	The ICESEA definition does not explicitly require the primacy of social objectives over economic objectives. Moreover, the definition only refers to "independence (autonomy) from external founders".
Germany	No official definition. The definition was	
Denmark	developed by the government-appointed Social Enterprise Committee.	A social enterprise must be run independently of public influence. This does not indicate the organisational independence of for-profit enterprises
Estonia	The characteristics of Estonian social enterprises, which have been widely accepted by experts in the field, were identified in cooperation with the public sector and the Social Innovation Working Group in 2016-2017.	The new Public Procurement Law adopted in 2017 creates new opportunities for social enterprises by including a social value requirement in tender documents. Another important document is the Ministry of Social Affairs' Welfare Development Plan 2016-2023.

Country	Source of the concept	Links to the definition of social business
Finland	Definition provided by a working group set up by the Ministry of Employment and the Economy (MEE) in 2010.	This definition does not require social enterprises to include governance models. Organisational autonomy is implied but not explicitly stated in the definition.
France	Social and Solidarity Economy Act (2014) - defines for the first time the scope of the social and solidarity economy.	Organisational autonomy is implicit but not explicitly mentioned in the law.
Greece	Law 4019/2011 on the Social Economy and Social Entrepreneurship sets out the features of the definition of social economy entities, which are more akin to the concept of a social enterprise.	According to the law, social economy entities "shall enjoy autonomy in the management of their activities", but this concept is not further explained.
Hungary	There is no official definition. The government uses the European Commission's definition to define eligible organisations under its grant programme for social enterprises.	The concept of the social enterprise and the social entrepreneur first emerged in Hungary in the second half of the 1990s and the first half of the 2000s with the launch of US-based international NGOs and foundations.
Ireland	Definition developed by Forfás, the Irish Government's advisory body on enterprise policy (2013).	Social enterprises are "separate from government". The definition does not require organisational independence from profit-making or governance models.
Italy	Law on Social Enterprises (Legislative Decree 155/2006) Law on Social Cooperatives (Decree 381/1991).	The requirements of Italian law correspond exactly to the definition of a social business.
Latvia	12 October 2017 The Latvian Parliament approves the Law on Social Enterprises.	The current criteria do not explicitly require the social objective to take precedence over the economic objectives. Governance autonomy is not explicitly included in the list of criteria. However, according to the draft law, social enterprises will be subject to commercial law, which implicitly implies management autonomy.
Lithuania	Law on social enterprises. 1 June 2004. No. IX-2251 (as last amended by No. XI-1771 of 1 December 2011, Official Gazette of the Republic of Slovenia, 2011, No. 155-7352 (20 December 2011)).	The law does not require organisational autonomy for profit (it only mentions autonomy from the state), but it does state that social enterprises must respect the basic legal and operational requirements of their basic legal form. Social enterprises are not required to follow governance models.
Luxembourg	No official definition.	
Malta	A working definition developed by the Ministry of Finance, Economy and Investment as part of the "Social Enterprise Project".	Management autonomy is implicit but not explicitly required in the working definition.
Netherlands	No official definition.	
Poland	The National Programme for the Development of the Social Economy (KPRES) has attempted to define the concept of social enterprise. Social enterprises are perceived as permanent and visible actors in social and economic life at local and regional level. It draws on support from the Labour Fund (LF) (10), the State Fund for the Rehabilitation of Disabled Persons (PFRON) and the ESF until 2020.	Social enterprises are perceived as permanent and visible actors in social and economic life at local and regional level.
Portugal	Social Economy Act 68 / XII. Article 5 of the Law sets out the basic principles of the social economy, which overlaps with the EU definition of the activity.	There is no explicit requirement for social economy actors to engage in economic activity.

Country	Source of the concept	Links to the definition of social business
Romania	Article 3 of the Social Economy Act sets out the principles of the "social economy" (adopted by the Senate in June 2014; debated in the Chamber of Deputies in the autumn 2014 session).	There are no clear restrictions on the distribution of profits, and there is no prohibition of assets law. The law requires the social economy entity to be "a separate legal entity with managerial autonomy and independence from the public sector"; organisational autonomy from profit is not explicitly mentioned.
Slovakia	Act No 5/2004 on employment services (2008 amendment).	No legal requirements related to management autonomy.
Slovenia	Social Entrepreneurship Act (2011).	The law requires social enterprises to be "self-managed" but does not specify what this means.
Spain	The Social Economy Law 5/2011 establishes the basic principles of social economy entities, which overlap with the EU's definition of the activity: the Law on Social Initiative Cooperatives (Law 27/1999) and the Law on the Regulation of Labour Integration (Social) Enterprises (Law 44/2007).	The law only requires social economy entities to be independent from public authorities; there is no clear criterion for profit independence; and there is no mention of the term "social enterprise". The definitions in these laws meet the criteria for social business.
Sweden	Government launches the Social Enterprise Strategy - a sustainable society through social enterprises and social innovation.	The Strategy identifies social enterprises as a heterogeneous group of actors that, regardless of legal form, use business activities to achieve social benefits, measure results in relation to societal objectives and, above all, to invest the profits in the organisation. Businesses and associations meeting these criteria are called social enterprises and are important drivers of social innovation, defined as initiatives that aim to overcome social challenges by providing new ideas and solutions to improve the services provided to citizens.
United Kingdom	Performance criteria used in the UK Government's biennial small business surveys (NB: this definition of social enterprise is broader than the concept of a Community Interest Company, which is a legal form reserved exclusively for UK social enterprises).	No integrative management required. Provides for organisational autonomy; but not explicitly included in performance criteria.
Switzerland	No official definition.	

Source: A map of social enterprises and their eco-systems in Europe (2015). Synthesis Report 43 -45 p.

- In most of the countries studied, the criterion of "independence" is understood as "managerial autonomy" and/or "autonomy from the state". Only in Italy and Portugal do national definitions emphasise independence from the State and other traditional profit-making organisations.
- In some countries, governance is not necessarily seen as a key feature of social enterprises (e.g. Finland, Ireland, UK).
- Some national definitions also include a requirement to report on social impact (e.g. Belgium, Italian law on social enterprises).

However, in addition to the perception of social business in individual EU countries, it is also important to analyse the forms that social business takes. Clarise (2018) distinguishes between two forms - social business and collaborative business. It is thus understood that social and collaborative businesses work with the purpose of being able to grow and better distribute wealth, as their own structure is based on the sharing, distribution and co-production of tangible and intangible goods.

European social enterprises do not have a single legal form (European Commission, 2013; Monzón and Chaves, 2012; Lešinska, Litvins and Pīpiķe, 2012), but the three most common forms are:

- cooperatives. For example, there are social cooperatives in Poland, Hungary, Italy and Greece, while in the UK there are companies that work solely in the public interest - in the community interest. The main activities of cooperatives are related to the social integration of target groups and employment integration. However, the distribution of cooperatives' income varies between EU countries.
- companies. Social enterprises in Finland and community interest companies (companies controlled by companies) in the UK work exclusively for the public good, while in Italy they represent for-profit companies.

- free legal form. In this case, social enterprise status is granted to an organisation regardless of its legal form and is in fact a brand. For example, this legal form exists in Finland.

To identify social enterprises in the EU, the main diversity of organisations that are currently considered social enterprises has been linked to the main criteria for defining EU activities. Table 5 summarises the results of this work (detailed explanations and company profiles can be found in the individual country reports). It shows:

- Legally recognised social enterprises - enterprises with a clear legal identity in the country concerned (based on a legal form created exclusively for social enterprises or on the legal status of a social enterprise); and

De facto social enterprises - In addition to legally recognised social enterprises, entities that fully meet the criteria set out in the EU definition (and are de facto social enterprises) include a wide range of organisational and legal forms, such as cooperatives, associations, public bodies, social cooperatives, etc.

De facto social enterprises are often "hidden" among other organisational and legal forms, in particular:

- associations and foundations with commercial activities.
- cooperatives serving common or collective interests.
- Leading companies with a clear and core social purpose.

Official statistics on social enterprises are scarce and limited: data on the number of legally recognised social enterprises, if any, are usually available, but they do not cover the actual number of social enterprises, which are the majority in all countries.

In some countries, attempts have been made to measure the scale of social enterprises, but these measurements have tended to be related to definitional and methodological issues; and are based on national 'constructs' of social enterprises and are therefore of little relevance for cross-border research.

All statistics are taken from country reports, most of them reflecting data availability between 2014 and 2018. The country reports provide more information on definitions, measurement concepts and the validity and reliability of data.

Table 9. Forms of Social Business Enterprises

Company forms	Countries	Exclusive to Social business form
Public limited company	Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Ireland, Italy, Luxembourg, Netherlands, Slovenia, Spain, Sweden, United Kingdom	
Public limited partnership	Bulgaria	
Private limited company	Bulgaria, Croatia, Estonia, Germany, Ireland, Lithuania, Luxembourg, Netherlands, Poland, Slovakia	
Limited liability company	Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Ireland, Italy, Latvia, Luxembourg, Slovenia, Spain, United Kingdom	
Individual enterprise	Austria, Bulgaria, Croatia, Denmark, Germany, Hungary, Lithuania, Netherlands, Sweden, United Kingdom	
Private institution	Croatia	
Economic Interest Group	Croatia, Ireland	
Economic partnership	Austria, Estonia, Hungary, Ireland, Netherlands	
General partnership	Bulgaria, Croatia, Denmark, Finland, Germany, Italy	
Limited partnership	Finland, Netherlands	
Banks	Croatia, Denmark	
Credit union	Croatia, Denmark, United Kingdom	
Foundation, private or in the public interest	Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Italy, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Spain, Sweden	
International non-profit organisation	Belgium	
A company with a social purpose	Belgium	

Company forms	Countries	Exclusive to Social business form
Cooperative	Bulgaria, Croatia, Czech Republic, Finland, France, Germany, Hungary, Italy, Luxembourg, Malta, Portugal, Slovenia, Spain, Sweden, United Kingdom	
Cooperative for people with disabilities	Bulgaria	Yes
Specialised company for people with disabilities	Bulgaria	
Trust	Austria, Ireland, Malta	
Partnerships	Croatia	
Clubs	Cyprus	
Public benefit corporation	Czech Republic	
Association of interests of legal persons	Czech Republic	
Foreign companies	Denmark	
Mutual insurance organisation	Estonia, Finland	
Entrepreneur	Finland, France, Germany, Ireland	
Social cooperative enterprise	Greece, Hungary, Italy, Poland, Czech Republic, Portugal, France	Yes
Social cooperative with limited liability	Greece	
Women's agro-tourism cooperatives	Greece	Yes
A friendly society	Ireland	
Committee	Italy	
Social enterprise	Italy	Yes
Non-profit organisation	Belgium, Cyprus, Hungary, Poland, Slovakia, Sweden	Yes
Public body	Lithuania, Slovenia	
Association	Austria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania	
Social integration centres	Poland	
Religious associations for social solidarity	Portugal	
Mutual aid workers' associations	Romania	Yes
Pensioners' mutual aid associations	Romania	Yes
Organisations set up by municipalities	Slovakia	
Civic associations	Slovakia	
Cooperatives for social initiatives	Spain	
Social integration companies	Spain	
Special employment centres	Spain	
Utility Partnership	Spain	
Community interest company	United Kingdom	
Charitable organisation	United Kingdom	

Source: compiled by the authors from country reports on social business.

Table 9 shows that only seven forms of social business enterprises were dedicated exclusively to social business.

Given the large uncertainties in the data and assumptions, the figures in Table 14 should be treated as a broad indication of the extent of social enterprise activity in each country (rather than as precise estimates) and should not be added to arrive at an EU total. The figures are based on indicative (and often subjective) estimates of the share of social

enterprises among certain groups of actors and other assumptions. The reporting periods for which data are available sometimes differ between entities. In view of these caveats, the results should be interpreted with great caution.

Studies have been carried out to clarify the possible forms and range of 'national social businesses' and to distinguish these evolving forms from the social and conventional economy, but the diversity of national economic structures, welfare and cultural traditions and legal systems mean that measuring and comparing social business activity across Europe remains a challenge. Statistical information on social enterprises is lacking and inconsistent across Europe. Since 2013, the European Commission has started to receive reports from different European countries on "Social Enterprises and their Ecosystems in Europe", which include social business initiatives, their activities and several statistical data. These reports describe the broad contours of social business activities and ecosystems in 29 European countries (EU28 and Switzerland), using a common "operational definition" and research methodology. However, the sufficiency, consistency and integrity of the statistics are not addressed by these reports. In many countries, there is still insufficient information on social business statistics (number of enterprises, number of employees, share of income generated).

Table 10. Estimated Scale of Social Business Activity across Europe in 2019

Country	Number of social businesses	Number of employees
Austria	1535	n.d.
Belgium	737	n.d.
Bulgaria	3674	26000
Croatia	526	3500
Czech Republic	3670	n.d.
Germany	1786	n.d.
Denmark	282	3483
Estonia	122	1603
Finland	2500	n.d.
France	28000	n.d.
Greece	325	n.d.
Hungary	15344	77388
Latvia	200	700
Lithuania	148	6600
Malta	50	n.d.
Netherlands	5000	n.d.
Poland	20784	103201
Portugal	8011	145373
Romania	5302	12469
Slovakia	900	n.d.
Slovenia	254	378
ES	8500	n.d.
Sweden	343	3500
United Kingdom	27000	272000

Source: authors' compilation of country reports on social business

As can be seen from the data in Table 10, a small number of European countries are aware of the number of social enterprises operating in their countries and of the number of employees working there.

According to Eurostat, one in four new companies set up each year in Europe (and one in three in France, Finland and Belgium) is a social business (Social enterprises and their ecosystems in Europe. Comparative synthesis report, 2020). EU Member States, including Lithuania, have chosen social business as one of the means to tackle poverty, lack of educational opportunities, unemployment and growing social exclusion. An unfavourable legal and tax environment, lack of institutional recognition, lack of financial support, and low visibility of social entrepreneurship limit the development of social entrepreneurship in Lithuania.

Social Business Entities in Lithuania

Lithuania recognises two forms of social business enterprises: the social enterprise and the social enterprise for people with disabilities. A social enterprise is a legal entity or a subdivision of a legal entity that has acquired the status of a social enterprise in accordance with the established procedure and employs at least four employees belonging to the target groups of persons employed by social enterprises. Social enterprise for persons with disabilities - a legal person or a subdivision of a legal person which has acquired the status of a social enterprise for persons with disabilities in accordance with the established procedure, where the number of employees belonging to the target groups employed by social enterprises is at least four and where the number of employees working in the social enterprise for persons with disabilities, who are employed for a total of at least 80 hours per month, is at least 50 per cent of the annual average number of employees of a social enterprise for persons with disabilities on the list (Social Enterprise Act, 2020). Researchers (Jakubavičius et al., 2016) point out that in Lithuania, "the set of social business entities can be identified by modelling three sets of entities:

- economic operators carrying out economic and commercial activities.
- social enterprises.
- non-governmental organisations".

According to Jakubavičius (2016), "the choice of these three sets of entities was determined by the following elements: the basic potential to develop commercial economic activity and the potential/interest/, the potential to fulfil the social mission or the basic potential to fulfil the social mission and the potential/interest/opportunity to develop commercial economic activity".

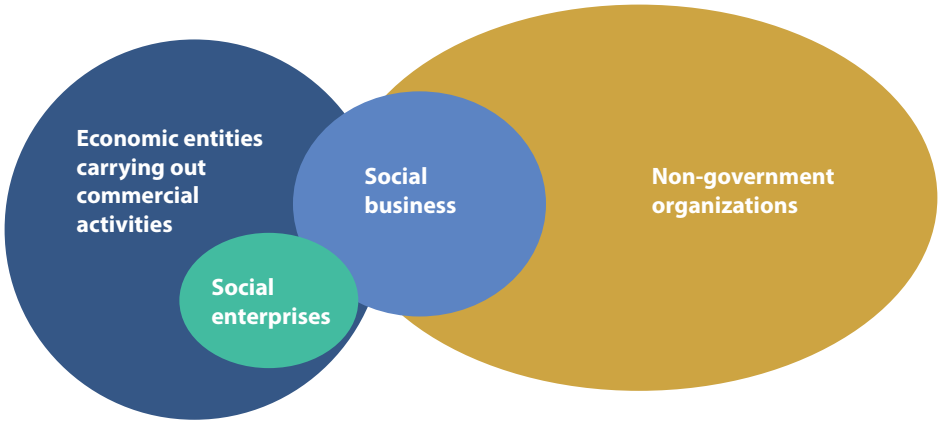


Figure 4: Modelling Social Business Entities
Source. Jakubavicus, 2016

As can be seen from Figure 4, social businesses are much more broadly conceived than social enterprises.

However, in addition to social enterprises for people with disabilities or social enterprises, there are also genuine social business enterprises in Lithuania, where a part of their profits is dedicated to the achievement of the social goals of society. These can be all forms of businesses operating in Lithuania. Therefore, it is possible to extend the understanding of social business offered by Jakubavičius (2016) and to indicate that social business entities in Lithuania can include:

- Businesses that carry out economic and commercial activities and allocate part of their profits to the achievement of society's social objectives.
- social enterprises.
- social enterprises for people with disabilities.

There are no statistics on such companies in Lithuania, and no state support is provided to them.

According to the data of Versli Lietuva, at the end of 2018 there were almost 90 social businesses in Lithuania, while in Plymouth (UK) alone, with a population of only 260,000 people, there are 150 social business enterprises.

According to the data of the Employment Service under the Ministry of Social Security and Labour (2020), 175 social enterprises operated in Lithuania. There are social enterprises in nine cities in Lithuania (see Figure 5).

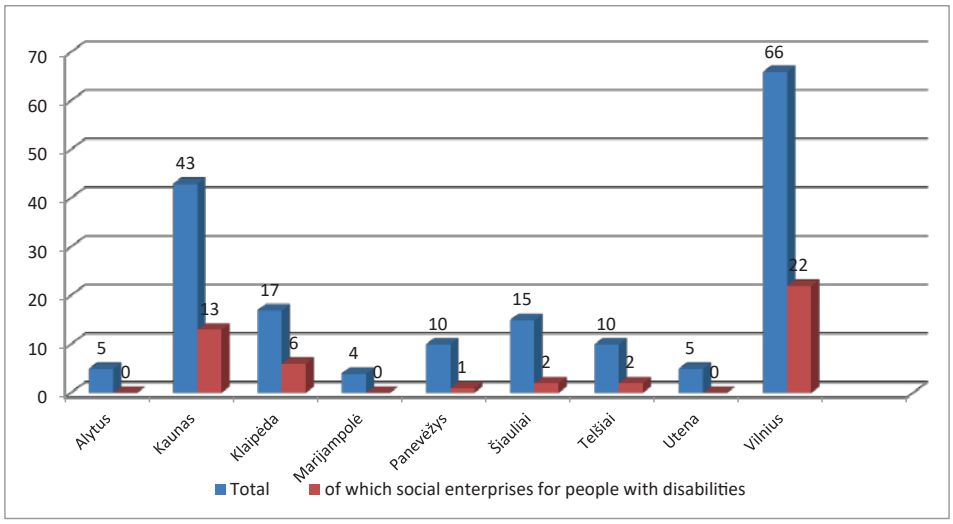


Figure 5: Number of Social Enterprises in Lithuania

Source: the Employment Service under the Ministry of Social Affairs and Labour Protection, 2020.

As we can see, social enterprises are concentrated in two major cities - Vilnius and Kaunas (37.7% and 24.6% respectively). According to the Classification of Economic Activities (see Table 11), most social enterprises are concentrated in manufacturing (35.75%) and administrative and service activities (20.23%). In contrast, in other activities social businesses are scattered and active in a range of activities from 7.6% to 0.5%.

Table 11. Activities of Social Business Enterprises according to the Classification of Economic Activities

Agriculture, forestry and fishing	0.5
Manufacturing	35.75
Water supply Wastewater treatment, waste management and recovery	2.19
Construction	7.25
Wholesale and retail trade; repair of motor vehicles and motorcycles	4.72
Transport and storage	2.19
Accommodation and food service activities	1.35
Information and communication	2.02
Financial and insurance activities	1.35
Real estate operations	1.85
Professional, scientific and technical activities	7.6
Administrative and service activities	20.23
Education	2.19
Human health care and social work	4.72
Arts, entertainment and recreation activities	1.18
Other service activities	4.56
Activities of households as employers of workers; activities of households engaged in the production of undifferentiated goods and services for own use	0.35

Source: compiled by the author from the Classification of Economic Activities and Employment Service data

If we compare with other European countries, we can see that social business activity has developed differently in different countries. For example, in Italy, Hungary and Romania, social businesses are most focused on health, care and education, but in Sweden they are more active in the utilities sector and in the UK in the accommodation, including catering, sector (European Commission, 2020).

In terms of the number of employees, the lowest rates of employment in social enterprises are found in Latvia, Lithuania, Slovenia, Croatia, Denmark and Sweden, where employment in such a model is less than 2% of the total workforce in those countries.

Another little-studied potential social business actor is non-governmental organisations.

There is a lack of research in Lithuania that analyses the value NGOs bring to the economy or to solving social problems. There is also no data to clearly define the extent to which the NGO sector is involved in addressing social problems. However, NGOs have all the potential to transform themselves into a social business entity, as their main activities are related to the fulfilment of social missions. Further research could analyse the methods and principles of transforming NGOs into social businesses.

In summary, it can be stated that in Lithuania the perception of a social business entity is much broader than that of a social enterprise, as it can include all economic entities that carry out economic-commercial activities and allocate a part of the profit to the implementation of social goals of society. The main criterion for classification as a social business is the allocation of profits to the fulfilment of social needs of society.

The Impact of Social Business on the State

The benefits of social business have been outlined in previous chapters, but it is worth emphasising that one of the benefits of social business is the creation of economic wealth in the society in which it operates. Indeed, a distinction can be made between micro- and macro-level impacts (see Figure 8).

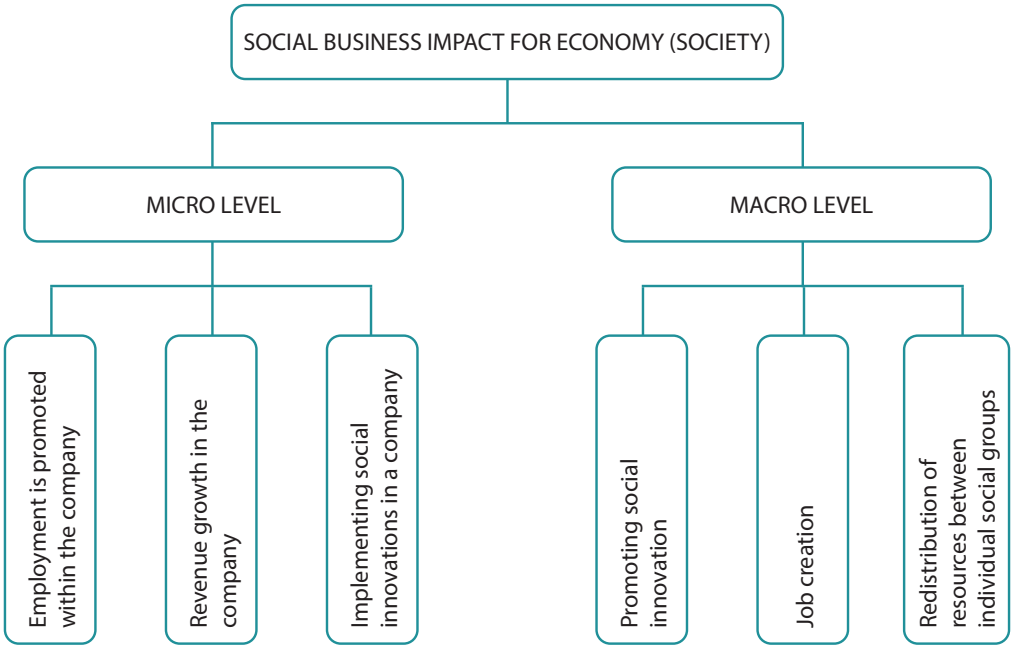


Figure 6: The Macro and Micro Economic Impact of Social Business

Social businesses contribute to employment in the society in which they operate, to the growth and circulation of incomes within society, to the availability of specific products or services and to the promotion of citizenship. At the macroeconomic level, the benefits and impacts generated by social enterprises are manifested in the promotion of social innovation, job creation and the redistribution of resources between different social groups. The social enterprises studied in the study were active in the field of employment, employing specific target groups.

The study traced the impact chain (see Figure 7).



Figure 7: The Social Business Impact Chain

The contribution of a social business enterprise includes the resources it has that are used for social business activities, such as money, volunteers, equipment, etc. The activities themselves are designed to fulfil a social mission. Direct results are defined as the number of people employed to achieve the social mission, the number of services provided, the number of services/goods produced, the changes in beneficiaries (performance) that occur over the medium and longer term of the enterprises' activities. Already among the impacts are changes in the behaviour, attitudes, skills etc. of the beneficiaries, reduced poverty, crime, increased entitlements, changes in fundamental social norms and changes in attitudes in society. Based on the logical value chain of impact, and as shown by the results of the study, it can be

argued that impact is the final changes in the impact chain that occur in the long- or medium-term of an organisation's activities, and that may not always be quickly and easily achieved, and may include social impacts, economic impacts, etc. Such impacts can be achieved in the community and society. In many cases, such changes may only occur after a long period of time and are therefore very difficult to observe and measure. It was therefore appropriate to look more at social rather than economic impacts. The social business enterprises studied have created impact in several directions and in several ways, thereby increasing the impact they create. For example, in addition to developing products or services for the socially vulnerable, employing people belonging to the target groups, the enterprise has also developed new social activities and programmes that are not related to their direct activities, but are socially beneficial. For example, through their activities, companies have encouraged young people to act, set up charities, promote volunteering, etc. Clearly, this was aligned with the company's core mission and stakeholders. These complementary activities contribute to the development of a company's sustainability, reputation and financial well-being. The social businesses studied in this way can be said to have 'opened the door' to other opportunities for creating social impact, i.e. to increase the social impact they create in society and thus involve many more stakeholders in their activities. It is up to each company to choose how it will create impact. It is also noteworthy that the social businesses studied chose one main avenue for creating impact (integration of socially vulnerable people into a full social life and the labour market; helping people with fewer opportunities to find a job; people with intellectual disabilities), while the other avenues were more secondary, but they are also important because they have an impact on society and the environment. In most cases, the primary mode of impact creation is directly linked to the social mission of the company: the products and services it provides to its customers and the social change it aims to bring about. This is why the study shows that the primary impact of social businesses in employment is created through the choice of human resources, through the employment of people belonging to the target groups. As the study showed, social enterprises have created impact in several ways, not only by employing socially vulnerable people, but also by employing people belonging to the target groups, i.e. people with intellectual disabilities, former drug addicts and convicts.

Taken together, the study and the calculations presented here provide a detailed analysis of how social business can influence the employment and life stability of the people it employs, as well as their value to different stakeholders. As mentioned earlier, the study focuses on four areas, namely state support for housing, stable housing, criminal activity and health.

Table 12. Number of Persons/Families Receiving Compensation for Part of the Rent or the Rent for the Purchase of Housing of 31.12.2019 Lithuania

Name of the list	Number of persons (families)	Number of recipients
Young families	164	469
Families with three or more children and/or children in permanent care	138	683
Persons without parental care and their families	41	85
Persons with disabilities suffering from severe forms of chronic diseases and their families	136	223
General	402	788
Total	**881**	**2248**

Source: Statistics Lithuania, 2020

As we can see, the highest number of benefit recipients is in low-income families. The results of the study show that housing, a key indicator of stability in the study, has stabilised after a year of working in a social business enterprise. The percentage of employees working in social business enterprises renting or owning a home or an apartment has increased from 74% to 96% over the past year. According to Statistics Lithuania (2020), the amount of compensation for the rent or the leasing part of the housing rent per person in 2020 ranged from EUR 3.84 to EUR 92.42 (depending on the size of the municipality). Therefore, the increase in the gross income of those in employment has a significant impact on the State. As the survey data show, there was a significant increase in gross income (from EUR 417/month to EUR 525/month) and a significant increase in labour income (from EUR 149/month to EUR 480/month) among the employed in the social economy, with a correspondingly significant increase in the share of labour income in total income (from 36% to 92%). The share of income from state benefits did not change significantly, ranging from 10% to 19%. The results showed that the share of those in employment with stable housing did not change significantly but remained relatively high (96%). Among the employed respondents, the share of respondents who worked for pay in the last month increased from 74% to 96% (significant difference). The share of those who have worked for pay in the

last six months and the share of time spent working in the last year also increased significantly. There were no homeless people among those employed in social business. Among those employed in social enterprises, there was a significant increase in gross income (from EUR 417/month to EUR 525/month) and a significant increase in labour income (from EUR 149/month to EUR 480/month), and a significant increase in the share of labour income in total income (from 36% to 92%). Stable housing costs, or a decrease in compensation, resulted in a loss of EUR 849 for one social worker.

The impact of social businesses working to promote employment and thereby impact the economy is the reduction of poverty in society, which was as much an indirect result of their activities as it was an indirect result of their activities, as other external factors can often contribute to the creation of this impact, which also have a significant influence on the impact, such as perhaps the reduction of poverty in society as a result of the activities of other organisations working in this field, or for other reasons, such as other poverty-reducing measures by the government. Impacts are rarely achieved by a single enterprise, but more often result from the activities of several enterprises, organisations or programmes. This is due to the complexity and complexity of the social problems addressed. Thus, in determining the impact generated by a social business enterprise, all other circumstances that may also have contributed to the changes that have occurred have been considered.

Respondents to the survey reported that their physical and mental health levels improved over the year after starting their job, with a benefit of EUR 100 per person employed by the social enterprise.

The results show that the workers became economically self-sufficient one year after being recruited by the social business. The main objective of the social business was to create economic self-sufficiency through employment and work experience in the social business. The study showed that six months of employment improved individuals' wages, long-term job retention and labour force attachment. The study showed that employment in social business increased by 19 percentage points after one year. The results are particularly significant for ex-convicts and drug addicts. The study shows that employees in social enterprises increased their earnings one year after starting their jobs. The impact of social business on labour income increased by EUR 311.17. There was also a significant increase in the total income of EUR 368 per employee in the last month in the social business enterprise. The increase in labour income of EUR 3,734 per employee in the social business is also highlighted. Moreover, the experience of social businesses for taxpayers is significantly higher than the subsidies they receive from the government (only social enterprises in Lithuania receive them) and other funders.

The criminogenic situation in Lithuania also influences the life of society. Therefore, it is very important to implement various programmes to reduce crime. As Table 13 shows, the number of criminal offences in Lithuania is decreasing and in 2019, the number of criminal offences registered per 100,000 inhabitants in Lithuania amounted to only 1,841, with a greater decrease in urban areas of Lithuania. This can also be attributed to the merit of social business enterprises.

Table. 13. Number of Registered Criminal Offences in Lithuania

Criminal offences, years	Number of criminal offences recorded | number			Number of recorded criminal offences per 100,000 inhabitants | number		
	Town and countryside	City	The Village	Town and countryside	City	The Village
2019	51 449	38 459	12 990	1 841	2 043	1 425
2018	57 830	43 473	14 357	2 070	2 319	1 561
2017	63 846	47 699	16 147	2 257	2 513	1 735
2016	59 075	44 834	14 241	2 060	2 326	1 513
2015	72 343	52 592	19 751	2 490	2 693	2 074

Source: the Lithuanian Statistical Department, 2020.

The study found that the number of avoided arrests after a year of working in social entrepreneurship was 2.4. The proportion of those arrested in the last year working in social business dropped significantly from 59% to 11%. The number of counselling sessions for addiction to intoxicants or narcotic substances did not change significantly (26% to 29% of the respondents had attended counselling in the last year). The study calculated the benefits in terms of avoided arrests at EUR 2,794 and the benefits in terms of reduced alcohol or drug dependence at EUR 967.

The study constructed an impact chain in which the impact results in benefits to society (through the economy, EUR 34,288), to the social business worker (EUR 817), to the social business as a business (EUR 7,970), to taxpayers who are not directly connected to the social business (EUR 22,607), and to friends and relatives of the social business worker (EUR 2,808).

The study revealed that there is currently no established culture of social impact assessment in social business enterprises and organisations of other identified assessment subjects, therefore, there is a need to educate the public and

authorities about the importance of social impact assessment, to organise educational events and conferences, and it is important to motivate the managers of social business enterprises to implement social impact assessment in their companies and organisations. The study found that networking would help the implementation of social impact assessment, and therefore social enterprises need to form associations, share information on social impact assessment practices and gain knowledge and competences on the social impact assessment process. At regional level, it is important to create a network on social impact assessment to involve businesses, experts and researchers. Such a network would actively contribute to the development of a culture of social impact and the promotion of research.

The study has shown that, although there are barriers and constraints in the internal and external environment of enterprises, the social business enterprise in the employment sector must remain the main subject of the impact assessment, as the results of the assessment influence better decision-making and improvement of activities.

The study found that support for social initiatives is crucial. Therefore, it makes sense for social businesses to form umbrella organisations, and to interact with academic institutions and the government sector.

The survey of social business enterprises was carried out, and all the enterprises were linked to one strand: employment. Therefore, when formulating further research directions, it is important to identify measurement indicators that are relevant not only for social enterprises operating in the employment field. The survey has led to the identification of indicators related to employment. In the formulation of social impact measurement entities, it is important to distinguish three levels: macro, meso and micro. The study has shown that the evaluation of social businesses should be carried out at meso-level, which could be carried out by the umbrella organisations of social businesses and by regional authorities, and at macro-level by national authorities in cooperation with universities and research centres, as this is a long-term monitoring of change, which requires special competences and high costs.

The three levels (macro, meso, micro) should also be respected when identifying measurement indicators. In order to develop indicators of the impact of social entrepreneurship in other areas, it would be useful to select indicators linked to the levels in question with the help of experts.

As a recommendation to national authorities, attention should be drawn to the dispersion of social business initiatives across ministries. The Ministry of Economy and Innovation of the Republic of Lithuania introduces social business, provides various overviews and recommendations, and provides funding for social business projects. The Ministry of Social Security and Labour provides measures to promote social entrepreneurship and business development. There is no inter-ministerial coordination. The third ministry that tries to apply an ineffective social business calculator and give the image of supporting social business in agriculture is the Ministry of Agriculture. There is no coordination between ministries. Therefore, to create a favourable tax and financial environment for social business in Lithuania, it would be advisable for all ministries to first coordinate their actions related to the implementation of the policy of promoting social business.

In the context of social business policy-making, social impact assessments can help to raise awareness among stakeholders and the public of the importance of social businesses, to prevent behaviour that is inconsistent with a company's stated mission, and to justify possible favourable treatment of the public sector in the light of its demonstrable contribution to addressing social issues. It is important to encourage the use of impact assessment practices. It would be appropriate for the implementation of social impact assessment practices to go hand in hand with the formal recognition and regulation of social business enterprises, as currently only social enterprises are recognised as social business enterprises in Lithuania. Social impact assessment requires not only specialist skills but also time, money and effort. This is especially true in the absence of easy-to-use, mostly common tools and metrics developed together with the social enterprises themselves. Time is needed not only to implement the various steps of the measurement process, but also to identify and collect the necessary data, to carry out the analysis and to report and disseminate the results. Establishing the causal links needed to truly measure the impact of a social business enterprise is one of the most complex tasks in the social sciences, and requires specific, specialised skills. The complexity increases when it is necessary not only to assess the effectiveness of a particular initiative or enterprise, but also to compare the impact of different interventions, or to set up equivalent treatment and control groups to determine how results may differ. Social businesses, especially small ones, do not have (and probably never will have) the resources to pay for staff dedicated solely to impact evaluation activities or to acquire the necessary competences in the market. Social businesses operate in labour-intensive sectors with lower profit margins, whether they are funded by the public sector or by providing services to consumers. Given these high costs, potential distortions in the market could arise if social businesses were the only ones to have to measure and report on their social impact. If the same requirements are not applied to public authorities or traditional businesses, these organisations will have a clear advantage (in terms of lower costs) compared to the social businesses with which they compete. For all these reasons, it would be fair to apply the same social impact assessment requirements to all the criteria) and to look for ways to compensate for the additional costs they would have to bear. Given the difficulty of developing effective social assessment tools, it would probably be more sensible to promote indicators for impact analysis that are widely shared, easy to implement and require minimal staff time. Perhaps projects should be launched and

supported at national level to develop social impact measurement models focusing on more mainstream activities such as labour integration, childcare or services for people with disabilities. Rather than developing new indicators (as some have already been developed), these projects should aim to establish methods of data collection and analysis so that the impact of companies, organisations and institutions can be measured and compared in a uniform way. At present, there are no statistics on social business enterprises in Lithuania. It would be appropriate to create a social business platform (as has been done with for socially responsible companies) where social businesses could submit data about themselves.

The assessment of the economic impact of social business shows that the impact is experienced at both micro and macro levels. At the micro level, social business enterprises are associated with job creation, the inclusion of target groups to promote employment, and the introduction of social innovation at the enterprise level. At the macroeconomic level, the benefits and impacts generated by social business enterprises are manifested in the promotion of social innovation, the creation of jobs in society and the redistribution of resources between different social groups.

CONCLUSIONS

The analysis of social business concepts shows that social business is defined by three principles: social business solves social problems that the public sector does not address; the main motive of social business is social benefit; social businesses use market mechanisms to create social benefits (without rejecting existing ones). Research has shown that social business does not yet have a single concrete definition, but according to the development and perception of social business, two main strands can be identified: the Anglo-American strand and the European strand. While some social entrepreneurs consider non-profit organisations with a social purpose to be social enterprises, others consider social enterprises to be only those that are concerned with meeting social needs. In this case, the form of ownership is irrelevant. In contrast, the continental European tradition is based on the three dimensions of social business: social, entrepreneurial and governance. The analysis carried out has allowed us to clarify the concept of social entrepreneurship and to show the different interpretations of it in different countries. The research has shown that social business can take many different forms but has also identified differences between social business and the traditional business model. Research has shown that social business addresses pressing social problems without seeking to maximise shareholder profits, and therefore most profits are primarily used to address social problems, i.e. reinvested in the development of their own operations or used for social and charitable activities. The scope of social business has been clarified.

The literature identifies external and internal factors influencing the development of social business. Research has shown that not all factors are equally applicable in all countries - some are more relevant than others, depending on the national situation. For example, access to finance is difficult and more of an issue in countries such as the Netherlands and Denmark (where more than a third of social businesses do not have lines of credit) compared to Switzerland where access to finance is not a particularly important issue (at least compared to EU Member States). The possible forms of "national social businesses" and their range are explained. A distinction is made between these evolving forms and the social and conventional economy. Further empirical research could show the relative importance and impact of each barrier for each country, type of social business and stage of development. The analysis of the academic literature has shown that many authors analyse social business as a phenomenon by looking at social business models without considering the impacts and benefits of social business.

Research has shown that the benefits of social business are debated among researchers. Social businesses face difficulties in measuring the benefits they generate. This is straightforward for traditional profit-seeking businesses, where it is possible to use tangible figures and rely on a range of financial indicators, but for social businesses it requires complex and sometimes provisional methods of calculation. Research has shown that it is very difficult to measure impact and results in the social sector, and even if methods are developed to measure results, the real organisational impact is in the long term. Currently, researchers are confronted with several obscure concepts, tools and methods designed for purposes other than measuring the impact of social business. For this reason, the academic literature is full of measurement approaches, considering the different characteristics, activities and objectives of organisations and the aspects to be measured. Traditionally, frameworks such as cost-effectiveness analysis, cost analysis, cost-benefit analysis and social return on investment have been used to measure social impact. More recently, however, the Social Return on Investment (SROI) methodology has been promoted as a more holistic approach to social impact assessment. However, the negative aspect of the SROI methodology relates to the difficulty of linking financial values to 'soft outcomes' and determining what would have happened without the counterfactual, as well as the poor comparability of SROI between activities.

The assessment of the impact of social business on the state shows that social impact assessment can be carried out at macro, meso and micro levels. The assessment of the impact generated at the micro level can be carried out by the enterprise itself. Meso-level assessment - the impact generated in the community and for beneficiaries at regional level. Macro-level evaluation - evaluation of the impacts generated at the societal level on society and beneficiaries is carried out by national authorities.

Social impact assessments can help to raise awareness among stakeholders and the public of the importance of social businesses in the development of social business policy, prevent behaviour that is inconsistent with a company's stated mission, and justify possible favourable treatment of the public sector in the light of their demonstrable contribution to addressing social issues. It is important to encourage the use of impact assessment practices. It would be appropriate for the implementation of social impact assessment practices to go hand in hand with the formal recognition and regulation of social business enterprises, as currently only social enterprises are recognised as social business enterprises in Lithuania. Assessing the social impact of requires not only specialist skills, but also time, money and effort. This is especially true before there are easy-to-use, common tools and metrics developed with social enterprises themselves.

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PART 2

COMMUNICATION STRATEGIES AND HUMAN CAPITAL DEVELOPMENT IN THE CONTEXT OF ECONOMIC SECURITY

2.1. ECONOMIC COMMUNICATION AND YOUNG PEOPLE'S PERCEPTION OF THE FUTURE

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Abstract *This paper investigates how economic insecurity is discursively produced and affectively circulated in Lithuania's public sphere, with a particular focus on young people's epistemic and emotional exposure to these narratives. Drawing on qualitative content analysis of digital news media and expert-authored Facebook discourse, the study approaches economic discourse not merely as a reflection of macroeconomic facts but as an affective infrastructure that shapes the interpretive environment in which individuals assess risk and agency. The research design is inductive, allowing discursive patterns to emerge from the data without pre-imposed categories.*

The central research objective is to identify what types of public messages provoke the feeling of economic insecurity; how media and social media narratives reinforce or contradict each other; which broader discursive models emerge from these patterns; and how a more ethically grounded economic discourse could be articulated. The findings suggest that messages combining technocratic information with emotional or moralised framings are particularly potent in producing a sense of vulnerability. Although the genres differ, traditional media and social media tend to reinforce each other's affective load, generating a feedback loop of institutional delegitimation, systemic exposure, and fatalistic affect.

The study identifies four dominant discursive formations — structural delegitimation, systemic exposure, affective ambivalence, and conditional resilience — each shaping economic subjectivity in distinctive ways. These formations do not merely communicate uncertainty; they structure the limits of future-oriented thinking and constrain perceived economic agency, especially for younger audiences. The paper concludes by proposing a set of communicative principles for epistemically responsible and affectively sustainable public discourse, emphasising tonal proportionality, generational inclusiveness, and narrative pluralism.

Keywords*: economic insecurity, discourse analysis, affective public sphere, youth subjectivity, Lithuanian media, epistemic responsibility.*

Introduction

Over the past decade, the mediation of economic risk has undergone a paradigmatic shift — from technocratic communication targeting expert audiences to emotionally charged, narratively complex discourse permeating mass media and digital ecosystems. In Lithuania, a small and trade-exposed EU economy, this transformation has intensified in the wake of post-2022 geopolitical ruptures, most notably Russia's invasion of Ukraine, persistent inflation, and structural recalibrations in global trade regimes. Economic discourse no longer functions solely as an informational relay; it has become a performative and affective force, shaping not only public understanding but also behavioural repertoires and socio-psychological orientations toward the future.

This study examines how economic insecurity is discursively constructed and circulated in Lithuania's public sphere, with particular attention to the affective and epistemic implications for young people. The inquiry is premised on the recognition that insecurity is not solely material but semiotic and emotional: it is produced and naturalised through language, framing, and narrative repetition. While macroeconomic indicators such as unemployment rates, wage dynamics, and inflation trajectories provide essential metrics, they fail to capture the interpretive and emotional textures of economic life as experienced by individuals navigating periods of social and economic transition (Bossert and D'Ambrosio, 2013; Hacker, 2019).

Lithuania's economic structure magnifies the salience of this phenomenon. With over 80% of GDP derived from exports (Eurostat, 2024) and a rapidly declining population base, the country exemplifies both structural openness and demographic fragility. These conditions render it not only economically exposed, but communicatively saturated: the density of economic discourse in media and social media functions as a "discursive infrastructure" that does not merely reflect insecurity but co-produces it (Fairclough, 1995; Berlant, 2011). The speed and intensity with which risk-related messages circulate — through headlines, opinion columns, expert commentary, and algorithmic amplification — has created an interpretive environment where emotional tone often outweighs technical nuance. As a result, the perception of insecurity can become decoupled from macroeconomic fundamentals and instead anchored in symbolic tropes, moral metaphors, and repeated affective cues.

Young people represent a particularly sensitive demographic within this communicative ecology. Entering the labour market, forming households, and negotiating intergenerational mobility during a period of systemic volatility, they are disproportionately vulnerable to discursive framings of precarity. Yet, paradoxically, they are rarely addressed directly in institutional economic communication. This study contends that youth are not simply consumers of economic narratives — they are constituted through them. Their economic subjectivity is shaped by the emotional valence and moral framing of messages that articulate what is possible, desirable, or foreclosed in economic life (Butler, 1997; Ahmed, 2004). Pervasive tropes of instability, exhortations to adapt, and warnings about unsustainability may not only inform young audiences, but also inscribe normative expectations about risk tolerance, resilience, and moral responsibility for navigating uncertainty.

The research adopts an inductive qualitative content analysis approach to examine two central domains of public economic discourse in Lithuania: mainstream digital news media and expert-authored Facebook posts. These platforms represent distinct but interconnected sites of meaning-making within the Lithuanian communicative landscape. Rather than imposing a priori analytical categories, the study derives message types inductively, allowing the semantic, emotional, and rhetorical structures of economic insecurity to emerge from the material itself (Elo and Kyngäs, 2008; Schreier, 2012). This methodological stance is crucial in capturing the latent dimensions of discourse — its tonal modulation, narrative tempo, and affective instructions — which structure not only what is said, but how it is heard and internalised. In doing so, the study explores how particular types of messages provoke the feeling of economic vulnerability, how different media genres interact to sustain dominant insecurity narratives, and how these discursive regimes might be normatively re-evaluated.

Four central research questions guide the analysis:

- Which types of public messages in Lithuanian news media and elite Facebook discourse are most associated with the provocation of economic insecurity?
- How do media and social media messages complement, reinforce, or contradict each other in constructing dominant discursive patterns of insecurity?
- What discursive models emerge from these patterns, and how do they shape the affective climate and perceived economic agency of young people?
- Which communicative principles could underpin a public economic discourse that mitigates rather than exacerbates the sense of economic insecurity?

These questions are situated within a broader interdisciplinary framework that synthesises insights from narrative economics (Shiller, 2017), affect theory (Appadurai, 2013), and critical discourse analysis. The study posits that insecurity must be conceptualised not merely as a deficit of material stability but as a product of affective economies—semiotic regimes in which emotional tone, institutional authority, and symbolic capital coalesce to define the conditions of plausibility, actionability, and belief (Bourdieu, 1991; Ahmed, 2004). It also extends this framework toward normative inquiry: if discursive environments help produce insecurity, what would a more epistemically responsible and affectively sustainable public economic discourse look like?

Ultimately, this chapter seeks to reorient the analysis of economic communication in small open economies. Rather than treating public discourse as a passive reflection of macroeconomic conditions, it foregrounds the constitutive power of language in shaping the affective atmospheres and cognitive maps through which economic life is navigated. For Lithuanian youth in particular, discursive constructions of risk are not simply external commentaries — they are infrastructural forces that contour the temporal, emotional, and behavioural boundaries of the imaginable future.

Conceptual Framework: Discursive Economies of Economic Insecurity

Public debates about the economy are rarely neutral. Whether filtered through headlines or social media posts, economic information is always mediated by language — language that frames, amplifies, attenuates, or redirects the perception of risk. In the post-2022 European context, where war, inflation, and energy insecurity coalesce into a

prolonged sense of unpredictability, the role of discourse in shaping affective responses to economic developments is particularly pronounced. This chapter offers a conceptual framework for understanding economic insecurity not as a static set of material indicators, but as a dynamic and semiotically constructed phenomenon. Drawing from multiple disciplines — economic sociology, political psychology, discourse studies, and behavioural economics — the chapter outlines how public narratives about economic conditions generate not just knowledge but also emotional climates, behavioural expectations, and institutional (dis)trust.

To this end, the chapter proceeds through four analytical steps. First, it critiques the limitations of materialist definitions of economic insecurity and introduces discourse as a constitutive analytic category. Second, it clarifies what is meant by "discourse" in this context, highlighting its affective, relational, and infrastructural properties. Third, it introduces the concept of discursive economies — semantic systems in which emotional tone, message content, and institutional form co-produce the felt sense of economic (in)stability. Fourth, it discusses why young people, although rarely addressed explicitly in public communication, are disproportionately exposed to these discursive dynamics. The goal is to build a cross-disciplinary language capable of diagnosing how insecurity is produced, circulated, and internalised through mediated economic speech.

1.1. From Metrics to Meaning: Why Insecurity Must Be Read Discursively

Conventional analyses of economic insecurity rely heavily on statistical metrics: unemployment rates, income volatility, debt-to-income ratios, or housing cost overburden. While these indicators are essential for measuring material precarity, they are insufficient for capturing the experiential and symbolic dimensions of insecurity. Insecurity is not only what happens to individuals but also how they interpret what is happening — and those interpretations are deeply conditioned by discourse. As Shiller (2017) argues in his theory of narrative economics, economic events are often less influential than the stories we tell about them. These stories, when amplified through media, shape not only public perception but also macroeconomic outcomes, such as investment behaviour, consumption patterns, and savings rates.

This is particularly salient in post-2022 Lithuania. Despite resilient macroeconomic fundamentals — moderate public debt, sustained GDP growth, and EU fiscal safeguards — the public discourse continues to reflect heightened anxiety. Narratives of energy dependence, policy inconsistency, and geopolitical fragility persist even after key structural adjustments. For instance, although Lithuania successfully phased out Russian gas imports and expanded LNG infrastructure in 2022–2023, official reports still highlight the volatility of international energy prices and their inflationary impact (OECD, 2025). This asymmetry between macro-level performance and discursive affect is not incidental. It signals a shift in how economic meaning is mediated: less through technical indicators and more through narrative frames and emotional salience.

The inadequacy of purely quantitative approaches has long been noted in adjacent disciplines. Ulrich Beck's (1992) concept of "risk society" posits that contemporary threats are no longer defined by their probability or magnitude, but by their interpretability. In other words, risk becomes a social artefact, shaped by cultural frames, institutional trust, and media amplification. Similarly, Appadurai (2013) describes the modern condition as governed by a "fear of the future," where economic actors operate under conditions of uncertainty that are as much emotional as they are informational. These theoretical contributions underline a crucial point: insecurity is not merely about negative outcomes, but about the erosion of predictive capacity — the feeling that the future is unknowable, and thus unplannable.

Lithuania provides a telling case in this regard. Surveys conducted by the European Commission (2024) indicate that Lithuanian youth are among the least optimistic in the EU about their economic future, despite relatively strong labour market indicators. This pessimism cannot be fully explained by material hardship; it reflects an interpretive dissonance between official statistics and the ambient discourse surrounding economic life. In public commentary, it is not uncommon to encounter phrases such as "the state is improvising, not planning" or "every new reform increase risk," even when macroeconomic fundamentals remain steady. Such formulations suggest that insecurity is not always indexed to decline; it can emerge from discursive saturation with volatility, contradiction, or perceived incoherence (European Commission, 2024).

These patterns are consistent with recent research in behavioural economics. Akerlof and Shiller (2010) highlight the role of "animal spirits" — non-rational drivers like trust, fear, and fairness perceptions — in shaping economic outcomes. Their insight is that psychological states do not simply respond to economic structures; they co-produce them. When public narratives induce chronic anxiety or diminish trust in institutional foresight, they recalibrate individual risk preferences, often leading to more conservative financial behaviours, lower long-term investments, or delayed life decisions such as home ownership or family formation.

The implication is clear: if public economic discourse shapes expectations, affects, and agency, then it must be treated as an analytical object. This requires moving beyond content analysis as mere thematic tagging, and toward a semiotic approach that recognises how tone, metaphor, and narrative structure interact with social position and institutional trust. For young people especially, whose economic biographies are still forming, discursive environments serve as cognitive templates for imagining the future — not in abstract, but in psychologically actionable ways.

In sum, this section has argued that economic insecurity must be understood not only through objective indicators but also through discursive constructions. In contexts like Lithuania, where structural exposure is high and institutional trust is uneven, the emotional and semantic framing of economic messages acquires heightened significance. Discourse shapes the perception of risk, the scope of agency, and the plausibility of planning. It mediates the space between what is materially real and what is socially actionable. Recognising insecurity as a discursive phenomenon enables a more nuanced analysis of how public communication structures economic subjectivity, particularly among youth. The next section explores how discourse operates not merely as content but as infrastructure — a set of relational, emotional, and institutional mechanisms that shape the way economic meaning is constructed and absorbed.

1.2. Discourse as Infrastructure: Semantic Structures and Affective Economies

Public discourse does not merely contain economic information; it circulates through patterned forms that structure what can be said, how it can be said, and what emotional reactions are licensed. This section deepens the conceptual lens by focusing on discourse as infrastructure — not as a static repository of meanings, but as a dynamic and affective system that links semantic form, relational positioning, and institutional trust. Unlike content-focused models of communication, this approach recognises discourse as a distributed force: one that configures relations between speakers and audiences, regulates tone, and reproduces broader ideologies. Drawing from discourse theory, affect studies, and critical institutionalism, this section builds the scaffolding for a deeper understanding of how insecurity travels through public speech acts, not only as information but as atmosphere.

The concept of discourse as infrastructure implies that language operates beyond propositional content. Following Fairclough (1995), discourse embeds institutional authority, social hierarchies, and cultural assumptions. It shapes not only what is said but who can speak, who is heard, and under what conditions meaning becomes legitimate. Foucault (1972) advanced this idea by arguing that discourse delimits the "regimes of truth" that structure knowledge itself. In the economic domain, this means that how uncertainty is framed — by whom and in what tone — determines its social uptake.

This is particularly evident in how technocratic language intersects with moral commentary. In Lithuanian media, phrases such as "living beyond our means" or "spoiled by EU funds" exemplify how economic claims become moralised. These tropes operate less as data-driven assertions and more as evaluative speech acts that invoke responsibility, blame, and virtue. Such language aligns with Wetherell's (2012) concept of affective practice: recurrent discursive forms that pattern emotional response while naturalising specific worldviews.

Moreover, affect theory highlights that discourse is not simply cognitive; it is also embodied. As Berlant (2011) argues, public speech carries "affective payloads" — latent emotional instructions that condition how listeners feel, regardless of the factual content. When economic statements invoke urgency, shame, or pride, they do more than inform; they choreograph collective sentiment. In contexts of institutional distrust or perceived policy incoherence, these affective cues gain potency. Emotional infrastructure becomes a stabilising — or destabilising — force that precedes rational assessment.

The Lithuanian context offers several illustrations. Discursive framings around emigration, for instance, often adopt fatalistic tones: "nothing will change," "everyone is leaving," "there's no future here." While demographically based, these claims acquire affective momentum through repetition, insinuation, and institutional silence. A young person encountering such messages does not merely update their beliefs — they internalise a horizon of diminished expectations. This is the infrastructural effect: discourse creates not just content, but a psychic map of what is thinkable and liveable.

Habermas's (1984) notion of communicative rationality provides a counterpoint. Ideally, discourse should enable consensus through reasoned deliberation. Yet in practice, the public sphere is saturated with strategic communication aimed at persuasion or emotional mobilization. Economic discourse, when stripped of dialogic accountability, becomes performative rather than communicative — it signals alignment, manages perception, or hedges institutional credibility. This performativity becomes infrastructural when it is routinised, expected, and rarely interrogated.

Critically, viewing discourse as infrastructure allows for an analysis of its durability. Infrastructure, by definition, sustains and organises activity over time. Discursive infrastructure, similarly, stabilises interpretive patterns even as surface-level content changes. This explains why certain rhetorical tropes — such as associating economic stability with fiscal austerity, or equating youth mobility with national decline — persist across media cycles, political parties, and policy frameworks. These forms do not simply survive; they become default interpretive grammars.

Furthermore, the infrastructural lens reveals feedback effects. As discourse conditions emotional climates and public expectations, it alters institutional responses. For instance, if policy makers perceive that public sentiment is shaped by catastrophic framings, they may adopt overly cautious or symbolic measures. This generates a recursive loop: discourse anticipates crisis, institutions respond performatively, and the affective climate of insecurity deepens. These loops are not irrational — they follow the logic of institutional legitimation under discursive pressure.

This section has argued that discourse functions as a form of infrastructure — an underlying system that enables and constrains economic sense-making. Through recurring semantic patterns, relational authority, and emotional tone, public speech shapes how insecurity is experienced, communicated, and internalised. In Lithuania, where technocratic claims often blend with moral narratives and emotional cues, the infrastructural power of discourse is particularly salient. Young audiences, lacking institutional anchors, are especially susceptible to these dynamics. Understanding discourse as infrastructure allows us to examine not only the content of economic messaging, but the patterned logics that reproduce affective environments of insecurity — and their recursive influence on institutional behaviour.

1.3. Discursive Economies: How Meaning, Affect, and Authority Co-Produce Economic Insecurity

This section builds on the infrastructural perspective developed earlier to introduce the concept of discursive economies: patterned constellations of meaning, affect, and institutional authority that circulate in public discourse and shape how economic insecurity is understood and lived. Unlike isolated speech acts, discursive economies are semi-stable formations — ensembles of rhetorical tropes, emotional tones, and epistemic claims that structure social knowledge over time. They enable certain framings of economic reality to become dominant, while marginalising alternative narratives. In doing so, they mediate not only what people believe about the economy but how they feel, whom they trust, and what actions appear viable. In Lithuania's contemporary context — marked by geopolitical tension, rising prices, and institutional recalibration — these formations are especially influential in shaping young people's affective orientations toward economic life.

The term "discursive economy" denotes more than the discourse about the economy; it captures how discourse itself functions like an economy — with symbolic resources, value hierarchies, flows of credibility, and sites of exchange. Drawing on Bourdieu's (1991) theory of symbolic capital, we can think of public discourse as a field in which actors (experts, journalists, politicians) compete for authority by deploying narrative grammars. The payoff is not monetary but reputational: the ability to define what counts as risk, prudence, growth, or stability. This symbolic power is asymmetrically distributed. Some actors shape the "authorized vocabulary" of economic talk, while others remain excluded. For example, central banks and finance ministries enjoy high epistemic privilege, even when their messaging is affectively charged or speculative.

These narrative formations exhibit internal coherence. For instance, a "scarcity discourse" tends to combine alarmist metaphors (e.g. "budget holes," "spending avalanche") with moral frames ("we must tighten our belts") and institutional critique ("reckless populism"). This is not merely a set of rhetorical flourishes — it constitutes a discursive economy in which austerity is naturalised as prudent governance. In Lithuania, such framings have appeared across election cycles, often resurfacing regardless of actual fiscal data. Similarly, "resilience discourse" links crisis vocabulary ("shocks," "disruptions") with appeals to national strength and adaptation. These discourses allocate value — what counts as responsible, what counts as naïve — and thereby regulate emotional legitimacy.

Discursive economies also rely on affective consistency. Sara Ahmed's (2004) concept of the "affective economy" helps clarify how emotions are not merely responses to content but circulate and stick to particular signs and bodies. In the Lithuanian case, notions like "youth" or "future" often become saturated with worry, doubt, or irony — even when no direct accusation is made. This sticky effect limits the aspirational range of young people. For example, optimism can be discursively coded as unrealistic, while cautious realism is valorised. In this way, discourse does not simply reflect insecurity — it conditions which emotional orientations are socially viable.

The discursive construction of economic actors also merits scrutiny. Certain roles — such as the "prudent saver," the "responsible taxpayer," or the "entrepreneurial innovator" — are valorised, while others — such as the "dependent welfare recipient" or the "entitled youth" — are problematised. These figures serve as moral templates through which macroeconomic narratives are humanised and simplified. Importantly, they also provide affective cues: admiration, resentment, pity, or disdain. In Lithuania, the recurring tension between "productive citizens" and "passive dependents" maps not only onto economic debates but onto generational identities, shaping how young people imagine their own legitimacy within the economic system.

Moreover, discursive economies interact with media logics in ways that amplify affective asymmetries. Sensationalist headlines, algorithmic feedback loops, and fragmented attention cycles privilege emotionally charged content over deliberative nuance. This contributes to what some scholars describe as the "affective inflation" of economic discourse: the intensification of tone without proportional informational gain. Under such conditions, the discursive space for alternative or hopeful framings of economic life contracts. As empirical research on youth news consumption in Europe shows, many young audiences disengage from economic reporting not due to apathy, but as a response to cognitive fatigue and the perceived repetitiveness of negative framings (Newman et al., 2023; Duvekot et al., 2024). This withdrawal is not external to discourse; rather, it participates in shaping the discursive economy itself by altering the circulation of messages and reinforcing asymmetries of voice.

It is also necessary to situate discursive economies within broader geopolitical imaginaries. In post-2022 Lithuania, economic talk is often entangled with security discourse. Terms such as "resilience," "sovereignty," and "strategic autonomy" function dually — as economic and military signifiers. This convergence intensifies the stakes of public communication: economic pessimism may be coded as unpatriotic, while critical evaluation of state strategy may be dismissed as destabilising. Thus, discursive economies are not neutral semantic ecosystems; they are embedded in larger struggles over national narrative, legitimacy, and identity. For youth, this creates a paradoxical pressure: to be future-oriented and entrepreneurial, but within a tightly scripted horizon of national duty and economic restraint.

The implications for youth are especially stark. Young people, as developmental subjects and future-oriented agents, are structurally positioned to absorb these messages during key transitions (education, labour market entry, family formation). Yet they are rarely producers of dominant economic discourse. Their role is that of affective receptors, not epistemic agents. This asymmetry raises critical questions: Who gets to define economic futures? Who narrates what counts as viable? And what forms of economic citizenship are imaginable within these discursive regimes?

Discursive economies are not mere aggregates of economic talk, but structured formations that coordinate meaning, emotion, and authority. They shape how insecurity is communicated, felt, and institutionalised. In the Lithuanian context, such economies have proven resilient, moralising, and emotionally narrow — particularly in their portrayal of youth and the future. Understanding these formations enables us to see beyond surface volatility and examine the deeper semantic and affective infrastructures that pattern economic life. This perspective also invites a broader reflection on democratic discourse: whose voices count, which emotions are legitimate, and how alternative futures can be narrated into being.

1.4. Youth as a Discursive Subject: Exposure, Marginalisation, and Affective Incorporation

This section focuses on how youth are positioned within the discursive economies outlined earlier — not simply as a demographic group, but as a socially produced category shaped by language, representation, and power. It examines the ways in which young people are discursively constructed through public economic narratives: how they are described, addressed (or not), and implicated in broader affective and normative frameworks. While youth are often presented as "the future," they are rarely treated as authoritative narrators of that future. Instead, they appear as objects of concern, risk, or aspiration — discursive placeholders onto which institutions project anxieties, hopes, or blame. In Lithuania, this symbolic positioning has intensified in recent years, particularly as economic volatility and demographic challenges converge in national discourse.

The central thesis of this section is that youth are not simply exposed to economic insecurity — they are constituted through it. Drawing on Judith Butler's (1997) theory of subjectivation, one can argue that young people emerge as subjects precisely through the discursive demands placed upon them: to plan responsibly, to adapt flexibly, to contribute economically, and to remain affectively composed despite pervasive uncertainty. These injunctions are not distributed equally. Some youths are cast as strategic actors ("innovators," "returnees"), while others are framed as burdens ("unmotivated," "dependent," "lost generation"). Such differential inclusion reproduces socioeconomic hierarchies and normalises emotional asymmetries.

A key dynamic here is performative subjectivation — the process through which individuals are constituted as subjects through repeated discursive acts (Butler, 1997). Lithuanian economic discourse rarely addresses youth directly in budget reports, central bank forecasts, or fiscal strategy documents. Yet in the margins of commentary, metaphor, and media, youth appear pervasively: as those who "must learn to save," "should not expect cradle-to-grave support," or "will pay the price" for past policy decisions. These formulations are not merely descriptive; they do something — they iteratively position youth within a normative economic subjectivity marked by precarity, self-responsibility, and inherited burden. In this sense, subjectivation is not imposed from above, but enacted through diffuse citations of responsibility, shaping youth as intelligible economic actors within a discourse that precedes them.

Another form of marginalisation occurs through the genre of policy futurism. In this mode, youth are invoked not as current agents but as abstract future stakeholders. Economic strategies promise that "future generations will benefit," "we must ensure sustainability for our children," or "the next generation must not bear this debt." These framings, though ostensibly inclusive, displace youth from the present. They defer agency and flatten complexity. The lived, immediate concerns of young people — job precarity, unaffordable housing, inflation-driven lifestyle insecurity — are translated into long-term institutional rationales. This rhetorical manoeuvre suspends youth in a temporal elsewhere: always the subject of planning, never the agent of voice.

Moreover, youth are often implicated in affective economies that police emotional legitimacy. Expressions of anxiety, frustration, or political critique are frequently recoded as entitlement or immaturity. This emotional disqualification sustains the asymmetry between authoritative voices (older experts, institutional actors) and the perceived volatility of youth response. It also contributes to affective self-regulation. As empirical studies on youth mental health show (Eu-

rofund, 2023), economic uncertainty often manifests in internalised stress, guilt, and fatalism — emotional states that correlate with withdrawal from civic participation and institutional trust.

These representational dynamics are compounded by institutional design. Despite targeted youth policies, most economic governance frameworks remain generationally blind — rarely distinguishing between the structural exposures of young people and the assumptions embedded in aggregate indicators. For instance, headline employment statistics may obscure underemployment, precarious contracts, and mismatch between qualifications and available opportunities — phenomena disproportionately experienced by youth. Yet these distinctions seldom enter mainstream economic discourse, resulting in a double invisibility: young people are either folded into adult averages or invoked symbolically, without analytical specificity.

Such exclusions have normative consequences. They condition which types of economic citizenship are imaginable. If youth are discursively configured as vulnerable but politically marginal, then collective action, demand articulation, or institutional critique become difficult to legitimate. Instead, resilience becomes privatised — an individual moral obligation rather than a socially supported process. As Honwana (2012) observes in the context of post-crisis youth, what emerges is a paradoxical figure: the "waithood" subject — temporally stuck, structurally excluded, yet constantly tasked with aspirational labour. Lithuanian youth, navigating between optimistic national rhetoric and precarious lived realities, increasingly inhabit this in-between status.

Nonetheless, youth are not merely passive recipients of discourse. Digital media environments, while saturated with dominant narratives, also offer counterpublic spaces where alternative economic imaginaries circulate. Research on youth-led media and activism in Eastern Europe (Sloam & Henn, 2019) shows that young people creatively remix institutional language, subvert deficit framings, and generate new affective grammars of resilience, irony, or care. In Lithuania, while large-scale mobilisation is rare, there are emerging discursive micro-practices — memes, informal critiques, youth podcasts — that complicate the dominant representational regime. These counter-discourses may lack institutional power, but they constitute vital epistemic interventions.

Recognising youth as a discursive subject thus requires attention to both marginalisation and agency, to imposed scripts and emergent re-writings. The analytical challenge is to trace how language positions youth — emotionally and epistemically — within an economic order that often renders them peripheral yet responsible. This requires methodological attentiveness to implicit narratives, rhetorical omissions, and tonal asymmetries. It also demands a normative stance: that discourse about youth cannot be analytically separated from discourse with youth. Only then can the field of economic communication be democratised.

Youth, as a discursive subject, emerge through patterns of representation that oscillate between strategic invisibility and moral overexposure. While public economic narratives in Lithuania rarely centre young voices, they constantly interpolate them as both vulnerable and responsible. This discursive ambivalence shapes not only how young people are spoken about, but how they imagine themselves and their futures. Understanding youth as a discursive formation — produced through language, tone, and institutional framing — allows for a more critical engagement with the emotional and epistemic consequences of economic communication. It also opens space for recognising emerging counter-discourses that resist marginalisation and reconfigure the emotional terrain of economic life.

1.5. Methodological Justification: Discourse, Inference, and Inductive Design

To investigate how economic insecurity is constructed and circulated within Lithuanian public discourse, this study employs inductive qualitative content analysis — a method particularly apt for capturing latent patterns of meaning where theoretical scaffolding is underdeveloped or context-contingent (Elo & Kyngäs, 2008; Schreier, 2012). Unlike deductive approaches that impose predetermined categories onto data, inductive analysis enables the emergence of semantic structure directly from textual material. This is especially relevant when the object of study — discursive affect — operates at the intersection of language, social practice, and emotional valence.

Economic insecurity, as conceptualised here, is not reducible to statistical indicators or subjective impressions alone. It emerges through mediated articulation, rhetorical resonance, and symbolic circulation. Thus, any method capable of tracing its contours must attend to tone, framing, and narrative architecture — not merely to propositional content. Inductive content analysis, grounded in qualitative epistemology, allows for such interpretive sensitivity while retaining analytical rigour through systematic coding procedures (Mayring, 2014). Its bottom-up logic fits particularly well with the exploratory aim of uncovering how insecurity is affectively mobilised, moralised, or normalised in public discourse.

The choice of this method is further justified by the hybrid nature of the data — journalistic articles and Facebook posts —which differ in authorship, tone, and communicative function, yet participate in a shared discursive field. Applying a common inductive framework across these platforms enables the detection of cross-medium regularities and divergences in how insecurity is encoded. Rather than treating media and social media as analytically distinct, the study approaches them as interacting genres within a broader communicative ecosystem.

Additionally, inductive analysis foregrounds the contextual embeddedness of meaning. It allows for the identification of implicit scripts, recurring metaphors, evaluative modalities, and affective markers — discursive features that might be missed in purely semantic or frequency-based approaches. In the case of economic communication, where statements often carry layered implications (e.g., technical critique as moral judgment), such sensitivity is crucial.

The method also aligns with a constructivist epistemology: discourse does not merely reflect reality but plays a constitutive role in shaping how economic conditions are perceived, valued, and emotionally inhabited. The analysis thus attends to both manifest and latent content, tracing how linguistic forms produce epistemic positions (e.g., the expert, the layperson), emotional expectations (e.g., anxiety, resilience), and social alignments (e.g., generational distinctions, elite critique). Through open coding and constant comparison, the analytic categories were derived iteratively anchored in textual material rather than imposed from theoretical abstractions.

Furthermore, inductive qualitative analysis affords reflexive depth. Since meaning is not static but emergent through interpretation, this method requires ongoing dialogue between empirical material and theoretical insight. The researcher's analytical gaze is not positioned above the data but entangled with it — generating typologies through iterative acts of inference, contrast, and synthesis. In the present study, the process of reading and re-reading the corpus across different temporal and affective registers enabled the distillation of four coherent but distinct discursive formations, each with its own narrative tempo, tone, and implicit theory of the economy.

Finally, the methodological stance adopted here also serves a critical function. By interrogating the affective and epistemic structure of economic discourse, the study resists technocratic reductionism. Instead of accepting economic communication as a neutral relay of expertise, it foregrounds how symbolic power is exercised — what counts as knowledge, whose voice is amplified, which feelings are authorised or delegitimised. Inductive analysis, in this sense, is not just descriptive but diagnostic: it makes visible the architectures of sense-making that render insecurity legible and actionable in ways.

In short, inductive content analysis is not only methodologically sound for the study of economic discourse but is epistemologically congruent with the theoretical premise that language constructs, rather than merely communicates, economic experience. Its application in this research enables a fine-grained exploration of how insecurity becomes thinkable, feelable, and actionable through patterns of public narration.

2. Patterns of Economic Insecurity in Lithuanian Public Discourse: Findings from Media and Social Platforms

This chapter presents the empirical core of the study, outlining how economic insecurity is discursively constructed across two major channels of public communication in Lithuania: mainstream media and Facebook commentary authored by elite economic actors. Building upon the conceptual framework developed in Chapter 1, the goal here is to trace how specific linguistic patterns, rhetorical moves, and affective cues shape public understandings of economic instability. In doing so, the chapter identifies distinct formations of meaning that go beyond factual reporting or ideological bias: it uncovers discursive logics that structure how insecurity is made thinkable and felt. Attention is paid to message categories and their distribution across media genres, culminating in a typology of four discursive formations. These are interpreted as both reflections and producers of the communicative environment in which economic subjectivities — particularly those of youth — are constituted.

2.1. Research Methodology

Research Design. This study employs a qualitative research design grounded in inductive content analysis to explore how economic insecurity is constructed across different public communication platforms in Lithuania. The analytical focus lies on the identification and interpretation of message types that potentially evoke, reflect, or normalize perceptions of economic instability, particularly in ways relevant to younger audiences. Given the multifaceted nature of public discourse, the study integrates two data sources: (1) mainstream online news articles; and (2) public Facebook posts authored by prominent economic actors. These sources are not analysed in isolation, but as complementary dimensions of a broader discursive ecosystem.

Inductive content analysis is particularly suitable for investigating domains where theoretical models are insufficiently developed or where meaning must be derived directly from empirical material (Elo & Kyngäs, 2008; Schreier, 2012). It allows for the bottom-up construction of analytical categories and is well suited for identifying latent semantic structures in both institutional and personalised communication settings. By applying the same inductive coding framework across different content types, the study seeks to reveal common patterns as well as medium-specific articulations of economic insecurity.

This method is also especially well-suited to the emotional valence of economic discourse. Economic communication is rarely neutral; it is often infused with anxiety, reassurance, blame, and speculation. Inductive coding allows

the analyst to attend to how these affective undercurrents operate — whether through metaphor, tonal modulation, narrative pacing, or strategic omission. Such cues are critical to understanding how economic insecurity is not just represented, but felt and inhabited.

Epistemological Orientation. The research is situated within a naturalistic inquiry paradigm (Lincoln & Guba, 1985), which assumes that social phenomena are constructed and interpreted within authentic communicative environments. Accordingly, both media and social media texts were analysed in their original, publicly accessible formats. This naturalistic orientation enhances the ecological validity of the findings, especially in the context of studying how public messages shape affective responses and perceptions of economic risk. The analysis proceeds from the premise that discourse is not a neutral transmission of information, but an active site where social and emotional realities are constituted.

Data Sources and Selection Criteria. The empirical material for this study comprises two distinct, yet methodologically compatible datasets: (1) online news articles published in April 2025 in two of Lithuania's most prominent digital news platforms (Delfi and Lrytas); and (2) public Facebook posts published by five influential Lithuanian economic actors during the same period. These data sources were selected to reflect both institutional media discourse and individually authored public commentary, capturing different communicative registers within the same socio-economic timeframe.

A total of 78 news articles were included. Articles were selected using the following criteria: (1) publication date between April 1 and April 30, 2025; (2) relevance to economic themes, including macroeconomic conditions, taxation, public policy, employment, or international trade; (3) presence in economics, business, politics, or opinion sections; and (4) sufficient textual length to allow semantic analysis. All articles were collected manually, preserved in their original layout, and analysed in full.

The social media dataset consists of 54 Facebook posts authored by five individuals selected based on their ranking in elite and public influence indices as published by Lithuanian opinion research (e.g., Delfi). All selected individuals — economists, business leaders, and policy influencers — are active participants in national economic debate. The posts included in the analysis met the following criteria: (1) original content authored by the account owner; (2) minimum length of 50 words; (3) focus on Lithuanian economic issues, such as structural reforms, fiscal developments, competitiveness, or socio-economic risks.

Importantly, the study excluded corporate press releases, reposted third-party content, and comment threads to maintain analytical consistency. The dual-source design enables an exploration of how similar themes are articulated in both institutionalised journalistic formats and personalised social media discourse, thereby enhancing the depth and contextual breadth of the analysis.

Data Analysis Procedure. The analysis followed the principles of inductive qualitative content analysis, which is designed to enable the systematic extraction of meaning units from textual data without the application of predetermined coding categories (Mayring, 2014; Schreier, 2012). The process was identical for both datasets, allowing for methodological consistency while remaining sensitive to contextual differences in communicative form.

In the first phase, all texts — news articles and Facebook posts — were read in full to identify preliminary themes. Using open coding, segments of text were extracted based on semantic relevance to the concept of economic insecurity. These units included not only explicit references to economic threats (e.g., inflation, taxation, instability) but also latent messages pertaining to structural fragility, institutional distrust, or affective unease.

In the second phase, the emerging codes were compared, refined, and grouped into broader message categories. The constant comparison method (Corbin & Strauss, 2015) was applied throughout: newly identified codes were tested against previously coded segments, and category boundaries were adjusted iteratively. Once thematic saturation was reached — defined as the point at which no new categories emerged from the data — a final coding framework of 22 inductively derived categories was established. This framework was then uniformly applied across both datasets.

Each coded message was recorded with contextual metadata, including author/source, date, and publication type (media article or social media post). Coding was carried out manually using tabular matrices to preserve traceability and facilitate later cross-case comparison. Although media articles were typically longer and more structurally coherent, Facebook posts offered denser rhetorical framing and greater emotive intensity, requiring additional attention to language tone and authorial intent.

Notably, while most Facebook messages could be coded using the existing framework, some thematic emphases — such as institutional blame, strategic pessimism, or elite reflexivity — were more prominent in social media discourse than in journalism. These variations were interpreted as differences in discursive intensity rather than evidence of separate message types and were retained within the same inductive structure for purposes of comparability.

Validity and Reliability. To ensure the trustworthiness of the findings, the study followed established criteria for qualitative research validity: credibility, dependability, confirmability, and transferability (Lincoln & Guba, 1985). These criteria were applied consistently across both datasets, despite their differing media formats.

Credibility was addressed through a transparent inductive procedure, in which coding decisions were grounded in the manifest and latent meanings of the text. All coded segments were retained with traceable references to their original location and author. The use of naturally occurring, public discourse — rather than simulated or elicited data — further contributes to the ecological validity of the study (Altheide & Schneider, 2013).

Dependability was ensured through iterative cross-comparison of codes and continuous refinement of category definitions. Throughout the process, the same 22-category inductive coding framework was applied to both traditional and social media texts. This methodological coherence across data sources enhances analytical consistency and permits cross-platform comparison without compromising conceptual clarity.

Confirmability was supported through the creation of an analytic audit trail, which documented decisions concerning code creation, revision, and category consolidation. The coding framework was developed exclusively from the empirical material, without reliance on existing theoretical taxonomies or normative assumptions. Where differences in rhetorical tone or authorial positioning were observed — particularly in social media posts — they were noted as discursive variations rather than epistemological deviations.

Transferability was addressed by providing detailed descriptions of the datasets, coding procedures, and category structure, allowing other researchers to judge the relevance of the findings in comparable contexts. While the results are context-specific, the analytical categories developed may be applicable to other media systems, particularly those operating under similar socio-political and economic conditions.

Analytical Contribution. The combination of inductive methodological discipline, cross-source consistency, and analytic transparency provides a strong foundation for the interpretation of how economic insecurity is constructed and communicated in Lithuanian public discourse. The method is conceptually generative, allowing the reconstruction of implicit affective grammars and discursive asymmetries that shape how insecurity is felt, circulated, and legitimised. It reveals not only what is said about the economy, but how economic experience is rendered actionable through patterned language and mediated emotion.

2.2. Results

Overview of Categories and Message Distribution. The qualitative content analysis of 132 textual units — 78 news articles and 54 Facebook posts — revealed a consistent presence of economic insecurity narratives across both institutional and personal communication channels. Using an inductively constructed 22-category coding scheme, messages were identified, grouped, and quantified based on their thematic characteristics and discursive function. Each unit of analysis (article or post) could contain multiple categories, depending on the complexity and semantic layering of the text.

Table 1 presents the aggregated distribution of message categories across all data sources. The most frequently occurring categories were *criticism of political or institutional decisions* (47 instances), *economic policy threats* (31), *global conflicts and economic consequences* (43), and *systemic rupture or epochal transformation messages* (37). Together, these categories accounted for more than 50% of all coded messages, suggesting a dominant discursive environment shaped by structural scepticism, perceived fragility, and geopolitical volatility.

While both media and Facebook content shared major themes, differences in rhetorical intensity and discursive framing were observed. Media articles tended to embed insecurity messages within journalistic or expert-driven frames, often tempered by technical explanation or institutional references. By contrast, Facebook posts more frequently exhibited emotive tone, direct critique, and normative positioning. However, the underlying message types remained stable across both sources, affirming the robustness and transferability of the inductive coding framework.

Table 1. Frequency of Economic Insecurity Message Categories across Media and Facebook Sources (Ranked by Total Frequency, N = 132)

Rank	Category	Total	Media (n=78)	Facebook (n=54)
1	Criticism of political or institutional decisions	47	26	21
2	Global conflicts and economic consequences	43	28	15
3	Economic policy threats	31	31	0
4	Systemic rupture or epochal transformation messages	37	24	13
5	Macroeconomic instability messages	35	21	14
6	Threats to individual economic well-being	27	18	9
7	Unpredictability of international decisions	20	20	0
8	State intervention narratives	21	15	6
9	Vulnerabilities of globalised interdependence	15	8	7
10	Consumer-level psychological uncertainty	9	4	5
11	Extreme economic scenario discourse	9	9	0
12	Optimistic resilience discourse	17	13	4
13	Geopolitical powerlessness	6	6	0
14	Compound threats (e.g., tax + tariff combinations)	6	6	0
15	Impact on vulnerable population groups	5	5	0
16	Structural support for small enterprises	5	5	0
17	Fragile growth messages	4	4	0
18	Conditional optimism about growth	4	4	0
19	Public sector adaptation and planning efforts	4	4	0
20	Precarity within positive performance contexts	3	3	0
21	Dual narratives: insecurity and opportunity	3	3	0
22	Institutional stabilisation efforts	3	3	0

The table shows that while certain categories — such as *economic policy threats* and *extreme scenario discourse* — are more prominent in news media, others — particularly *criticism of institutional decisions* and *consumer-level uncertainty* — gain greater salience in social media posts. Notably, *systemic rupture messages* appear prominently in both domains, suggesting a shared perception of long-term instability across elite commentary and institutional communication alike.

Description of Categories and Illustrative Messages. The most frequently observed category across both media and Facebook content was criticism of political or institutional decisions. This category encompassed explicit statements questioning the competence, coherence, or accountability of public institutions and decision-makers. While media sources typically conveyed such criticism through expert quotation or indirect framing, Facebook posts often contained direct, emotionally charged language, reflecting personal frustration or normative condemnation. In both contexts, the central theme was institutional inadequacy in addressing complex economic challenges. One Facebook author noted that "*the state is reacting with improvisation, not strategy*," warning that election cycles were eclipsing long-term economic thinking (V.J., Facebook). A media article similarly described recent reforms as "*conceptually fragmented, technically ungrounded, and socially tone-deaf*," drawing on business leaders' responses to policy drafts (R.D., media). Several texts raised concerns about government priorities, suggesting that industrial development and structural investment were being neglected in favour of short-term political optics. For example, one commentary lamented that "*budgetary allocations reflect narrative control rather than structural needs*" (D.A., Facebook), reinforcing the broader sentiment that political agendas may be destabilising rather than safeguarding economic fundamentals.

The second most frequent category – *global conflicts and economic consequences* – captured messages that positioned Lithuania within a volatile international environment shaped by power asymmetries, disrupted trade regimes, and contested geopolitical alignments. In this category, threats were predominantly external and systemic. Media articles often referenced international news sources or expert assessments, as in one report that quoted a German economist stating that *"the EU is increasingly vulnerable to price-setting by non-democratic exporters"* (anonymous, media). Facebook dis-

course similarly reflected global concern but was often infused with interpretive commentary. One author warned that "*geopolitical fragmentation is no longer a risk – it is the current baseline*," arguing that policy inertia in response to shifting alliances was "*economically suicidal*" (N.M., Facebook). Several posts drew attention to supply chain dependency and energy insecurity, suggesting that "*economic sovereignty has become a geopolitical concept*" (R.V., Facebook). Across both sources, this category revealed a discourse of constrained agency, wherein national economic health appeared contingent on decisions and forces beyond domestic influence.

The third category – *economic policy threats* – comprised messages identifying domestic fiscal, monetary, or regulatory decisions as direct contributors to economic instability. These messages framed government action not as a neutral technical response, but as an endogenous risk factor. Predominantly found in media texts, this category often included institutional or sectoral stakeholder criticism. One piece noted that "*the proposed tax restructuring would introduce volatility into SME planning cycles*," echoing concerns expressed by business associations (A.P., media). Other articles discussed potential investor retreat and labour market distortion, citing fears that "*a punitive redistribution model will disincentivise productive capital*" (M.D., media). Although rare in Facebook posts, the discourse was echoed in several business leaders' comments, indirectly referencing "*policy noise that undercuts long-term competitiveness*" (V.A.B., Facebook). These messages were often couched in systemic language, with terms such as "*reform failure*," "*regulatory drift*," and "*fiscal incoherence*" appearing across both platforms. The unifying element in this category was the portrayal of national economic policy not as a stabilising force but as a possible destabiliser.

The fourth category – *systemic rupture or epochal transformation messages* – referred to statements depicting the current economic context as indicative of deep structural shifts, irreversible transitions, or the end of a particular development paradigm. These messages did not focus on specific events or decisions but portrayed the present moment as part of a longer arc of decline or transformation. One Facebook post declared that "*we are not in a crisis – we are in a transition without a defined model*," asserting that Lithuania's economic path had reached a historical fork (V.J., Facebook). Similarly, a media opinion piece referred to "*the exhaustion of the export-led growth model*" and warned that "*without strategic reinvention, stagnation will become the norm*" (R.D., media). Many such messages used language associated with thresholds and tipping points — e.g., "*irreversible*," "*critical juncture*," "*new world order*." While some posts speculated on alternative economic models or policy paradigms, the overarching narrative was one of rupture: a recognition that the post-2004 trajectory of convergence and integration was no longer sustainable under current geopolitical and demographic pressures.

The fifth category – *macroeconomic instability messages* – encompassed discourse pointing to structural economic fragility, such as persistent inflation, low productivity, stagnating GDP growth, or high inequality. Unlike short-term turbulence, these messages presented instability as a chronic condition rather than a temporary fluctuation. Media texts frequently drew on economic data or institutional reports, with one analysis noting that "*wage increases in nominal terms are offset by a simultaneous decline in purchasing power*," particularly in lower-income brackets (N.M., media). Facebook authors echoed these concerns, often adopting a more interpretive tone. One post observed that "*growth exists only on paper – people feel the strain in supermarkets and utility bills*," capturing the disconnect between official indicators and lived experiences (D.A., Facebook). The discourse in this category was not overtly alarmist but conveyed a sense of slow erosion: messages stressed that while no acute crisis was occurring, the long-term trajectory was unsustainable without systemic intervention.

The sixth category – *threats to individual economic well-being* – focused on personal or household-level insecurity, such as income stagnation, employment volatility, reduced consumer confidence, or the inaccessibility of housing. These messages frequently served to link abstract economic dynamics to tangible everyday consequences. One Facebook author pointedly asked, "*How is it possible that our GDP has grown, but young families cannot afford even a basic apartment*?" (A.A., Facebook). In the media, similar narratives were woven through interviews and expert commentary, such as a report indicating that "growing energy costs have reversed progress in reducing material deprivation" (anonymous, media). A recurring theme in this category was intergenerational inequity: younger individuals were implicitly portrayed as particularly exposed to long-term economic risk, even when not directly addressed. Several messages referred to migration, postponed family planning, and financial exhaustion as indirect outcomes of macroeconomic dysfunction, thereby linking personal stressors to structural economic conditions.

The seventh category – *state intervention narratives* – included both affirmations and critiques of governmental efforts to mitigate economic risk. While the presence of state-led responses was acknowledged across both media and Facebook content, the interpretation of their effectiveness varied widely. Some messages framed intervention positively, such as the remark that "*targeted investment in export-supporting sectors can act as an economic buffer*" (R.V., Facebook). Others were more sceptical, describing such measures as "*reactionary instruments that address symptoms but not causes*" (M.D., Facebook). In several cases, particularly in media reporting, state measures were portrayed as necessary but insufficient. One article reported that "*emergency subsidies temporarily slowed layoffs in the manufacturing sector, but structural com-*

petitiveness remains unresolved" (anonymous, media). This category revealed a layered discourse: intervention was often demanded and simultaneously doubted, producing a narrative oscillating between expectation and disappointment. Importantly, this ambivalence differed in tone: media retained analytic detachment, while social media often expressed direct frustration or scepticism.

The eighth category – *unpredictability of international decisions* – was exclusive to media content and referred to perceived volatility in the global political and economic landscape, particularly among dominant states and supranational actors. These messages emphasised the challenges faced by small economies in responding to inconsistent or rapidly changing foreign policy stances, trade regimes, or regulatory frameworks. One news report described how "*the sudden imposition of sector-specific tariffs by a major trade partner created a climate of strategic paralysis among exporters*" (anonymous, media). Another article cited diplomatic sources warning that "*uncertainty in EU regulatory alignment may disrupt capital flows and investor confidence*" (anonymous, media). The tone in this category was cautious yet fatalistic, suggesting that external developments were both opaque and beyond domestic control. This construction of unpredictability served to reinforce the perception of limited national agency, positioning Lithuania as a recipient of external shocks rather than an autonomous economic actor.

The ninth category – *vulnerabilities of globalised interdependence* – referred to messages that framed Lithuania's economic position as precariously tied to international systems, especially global value chains, export markets, and external investment flows. Unlike the broader geopolitical category, this discourse emphasised economic over political dependencies. Authors often warned that "our integration into global supply systems brings efficiency, but also exposure," with one Facebook post stressing that "*a disruption in foreign demand instantly translates into local contraction*" (V.J., Facebook). In the media, these concerns appeared in commentary describing how "*overreliance on low-value-added exports and geographically narrow markets renders our economy highly sensitive to global sentiment shifts*" (anonymous, media). The underlying argument in this category was not anti-globalist but rather diagnostic: economic openness was portrayed as double-edged — beneficial in periods of growth, but risk-enhancing in times of instability.

The tenth category – *consumer-level psychological uncertainty* – included messages describing the affective or behavioural consequences of perceived economic risk, such as consumer pessimism, delayed purchases, or generalised anxiety. These messages often relied on survey data or anecdotal indicators, for instance citing "*a marked decline in durable goods purchases as households anticipate further price rises*" (anonymous, media). On Facebook, one author remarked that "*people have stopped believing in macro forecasts – they believe their grocery receipts*" (N.M., Facebook), encapsulating the emotional dissonance between institutional communication and lived experience. Another post observed that "y*oung adults today assume instability as a norm – it shapes how they study, work, and save*" (M.D., Facebook). These narratives linked macroeconomic signalling with micro-level behavioural change, suggesting that insecurity functions not only materially but also cognitively, influencing perception and long-term planning capacity.

The eleventh category – *optimistic resilience discourse* – captured messages that resisted dominant insecurity narratives by emphasising adaptive capacity, institutional competence, or strategic opportunity. These messages were comparatively rare, especially on social media, but served as discursive counterpoints. One Facebook post argued that "*crisis cycles are not a pathology – they are a precondition for intelligent economic reform*," positioning volatility as a potential stimulus for innovation (R.V., Facebook). Media texts more often embedded such messages in expert commentary, noting that "*EU structural instruments and long-term export orientation provide Lithuania with a macro-buffer unavailable to many emerging economies*" (anonymous, media). While the tone in this category was more neutral or hopeful, such messages often came with caveats, acknowledging uncertainty but emphasising agency. They also tended to invoke external validation — such as international rankings, investor sentiment, or comparative performance — to frame resilience as credible and not merely rhetorical.

The twelfth category – *extreme economic scenario discourse* – involved high-stakes projections or warnings about future collapse, systemic breakdown, or radical disruption. These messages employed a heightened rhetorical register, often invoking irreversible consequences. Media articles sometimes quoted dramatic estimates from think tanks or international institutions, such as "*by 2050, climate-driven economic losses could displace one-third of Europe's labour force*" (anonymous, media). One editorial warned that "*the convergence model is dying, and the alternatives are either managed decline or failed-state drift*" (anonymous, media). Although such messages were infrequent, they were discursively powerful: their language shifted from probability to inevitability, from risk to threat. Importantly, these narratives did not always offer concrete solutions—instead, they functioned as alarms, markers of epistemic rupture that signalled a boundary beyond which normal politics or economics might not apply.

The thirteenth category – *impact on vulnerable population groups* – included references to the differentiated consequences of economic change, particularly on socially or demographically disadvantaged groups. While this category was less frequently invoked across the dataset, its significance lay in its normative framing. Messages emphasised that macro-level reforms or global shocks were not equally distributed in their impact. One media commentary noted that

"*price hikes in utilities and food disproportionately affect pensioners and low-income households, who allocate a greater share of their budget to essentials*" (anonymous, media). Another article raised concerns that rural areas were "*structurally marginalised in both economic opportunity and state attention*," compounding existing inequalities (anonymous, media). Although explicit age-based segmentation was rare, several messages implicitly connected these vulnerabilities to young people, particularly in the context of housing affordability and labour market precarity. By foregrounding distributional effects, this category added a layer of social critique to otherwise structural or institutional narratives.

The fourteenth category – *state intervention narratives* – comprised messages describing governmental responses to economic instability, ranging from direct fiscal support to regulatory reform. Unlike broader institutional criticism, this category specifically assessed the logic, design, or sufficiency of intervention mechanisms. In some instances, the tone was cautiously optimistic. One media source stated that "*targeted grant mechanisms helped buffer SME contraction during the first quarter*" (anonymous, media), while a Facebook post described subsidy schemes as "*timely and technically appropriate, though limited in scope*" (R.V., Facebook). However, more frequently, authors expressed scepticism. A recurring argument was that interventions were reactive rather than anticipatory, addressing symptoms rather than causes. One post remarked that "*every fiscal patch shows we lack an economic architecture that anticipates shock*" (M.D., Facebook). This framing suggested not that intervention was unwelcome, but that its episodic nature exposed deeper weaknesses in economic governance.

The fifteenth category – *compound threats (e.g., tax + tariff combinations)* – referred to messages in which multiple stressors were described as converging simultaneously, creating non-linear or magnified risks. Though not frequent, these narratives were conceptually powerful in their depiction of intersecting vulnerabilities. One article detailed how "*tax reform coincided with reduced export demand, compounding fiscal stress across the logistics sector*" (anonymous, media). Another commentary warned that "*concurrent regulatory tightening and monetary contraction could trigger liquidity collapse among second-tier manufacturers*" (anonymous, media). The rhetorical structure of these messages was cumulative: each individual factor may have been manageable, but their combination was framed as overwhelming. The implicit message was one of cascading risk — a condition where systems under strain become progressively less resilient as shocks accumulate.

The sixteenth category – *optimistic resilience discourse* – although already discussed earlier (as 11th most frequent), deserves further unpacking here in relation to selective economic optimism. A small subset of posts and articles framed adversity as an opportunity for strategic repositioning. These messages often invoked national or sectoral advantages, such as digital infrastructure, biotech capacity, or geopolitical positioning. One Facebook post stated that "*if we align policy and capital, Lithuania can become a regional leader in automation and AI*" (V.A.B., Facebook). Another media opinion claimed that "*while Europe is bracing for stagflation, Lithuania retains unique flexibility due to its compact economy and institutional agility*" (anonymous, media). Importantly, even these optimistic narratives were typically conditional, hedging their tone with references to policy coherence, global stability, or leadership quality. Rather than refuting insecurity, they reframed it as a crucible for transformation.

The seventeenth category – *compound threats* – overlaps conceptually with systemic and policy-focused messages, but is distinguished by its emphasis on interaction effects. These messages framed economic risks as non-isolated: taxes, inflation, supply chain disruptions, and geopolitical tension were depicted as interacting variables rather than discrete phenomena. One media article described how "*increased excise taxes coincided with European sanctions on Chinese components, leaving local producers exposed from both ends*" (anonymous, media). In social media, similar arguments were condensed into phrases such as "*double pressure points*" or "*fiscal one-two punches*" (A.P., Facebook). The rhetorical strategy in this category was accumulative and sequential, reinforcing the perception that even manageable shocks could become destabilising when layered.

The eighteenth category – *public sector adaptation and planning efforts* – included statements highlighting strategic foresight, reform blueprints, or institutional learning. These were typically found in policy-oriented media reporting and focused on planned responses rather than reactive measures. One article noted that "*the Ministry of Economy has initiated sectoral scenario modelling for three macro-risk trajectories through 2030*" (anonymous, media), positioning planning as an asset in uncertainty. Unlike the state intervention category, which often conveyed dissatisfaction, this category presented institutions as capable of complexity-sensitive thinking. However, such messages were infrequent and often buried in specialist coverage, which may have limited their visibility and discursive influence.

The nineteenth category – *consumer-level psychological uncertainty* – dealt not with objective hardship but with subjective perceptions of insecurity. This form of uncertainty was often captured through survey references or anecdotal evidence suggesting deteriorating trust. For instance, a Facebook post remarked that "*consumer surveys are no longer just economic metrics—they're proxies for confidence in institutions*" (N.M., Facebook). Another observed that "*households are adjusting not only spending but also expectations — resilience becomes resignation*" (M.D., Facebook). Unlike material insecurity, which could be measured via inflation or income, these messages described ambient unease and its influence on behavioural patterns, including saving, borrowing, or mobility.

The twentieth category – *institutional stabilisation efforts* – included depictions of supranational or macroeconomic actors — such as the EU, ECB, or IMF — undertaking actions intended to preserve economic stability. These messages were typically embedded in media reporting on regulatory or monetary policy and framed as buffers against uncertainty. One article explained that "*the ECB's forward guidance policy is designed to anchor inflation expectations and restore interbank trust*" (anonymous, media). Such messages carried a tone of technocratic confidence, often contrasted with domestic political ambiguity. Notably, these narratives positioned institutions as rational actors acting in accordance with long-term modelling and policy tools.

The twenty-first category – *dual narratives: insecurity and opportunity* – captured the tension between threat and strategic repositioning. These messages did not resolve insecurity but framed it as a transitional moment. For example, one media piece observed that "*Lithuania's energy import dependence is a vulnerability, but it may accelerate investment into renewables*" (anonymous, media). A Facebook post noted that "*our export decline is painful, but it creates pressure to diversify away from low-margin sectors*" (V.J., Facebook). Such statements functioned as hybrid narratives: acknowledging instability while embedding it in a logic of transformation. They offered neither optimism nor fatalism, but a conditional possibility of renewal.

The final category – *precarity within positive performance contexts* – included messages that acknowledged favourable macroeconomic indicators, while simultaneously highlighting latent risks. These were nuanced critiques of overly celebratory narratives. For instance, one article stated that "*while GDP grew by 2.4%, household debt and labour attrition also increased*" (anonymous, media), implicitly challenging the sufficiency of aggregate metrics. Another message warned that "*headline growth masks sectoral contraction and wage compression*," inviting a more layered interpretation of success (anonymous, media). These narratives served as correctives, tempering linear progress stories with cautionary detail.

Dominant Message Types and Discursive Patterns. The analysis of message categories across both media articles and Facebook posts revealed not only recurrent thematic content, but also deeper discursive patterns — persistent rhetorical structures that organize how economic insecurity is represented, contextualized, and morally evaluated. These patterns do not emerge from isolated categories, but rather from their semantic co-occurrence and the narrative logic that binds them. Below, we elaborate on four principal discursive formations, each comprising multiple categories and communicative strategies. These patterns operate not only descriptively (what is happening), but also prescriptively (what should be feared, accepted, resisted, or hoped for), thus contributing to the affective construction of economic meaning.

Structural Delegitimation and Political Blame. This pattern brings together categories such as *criticism of political or institutional decisions*, *economic policy threats*, *compound threats*, and *precarity within positive performance contexts*. It is defined by a logic of delegitimation, in which the state is not merely described as ineffective, but as an active contributor to insecurity. Unlike technocratic critique, these messages ascribe agency and responsibility to decision-makers, often accusing them of short-sightedness, political opportunism, or ideological rigidity.

This pattern was most visible in Facebook posts, where authors employed evaluative language and positional framing. For example, one commentator wrote: "*While other countries plan, we improvise between elections*," presenting a causal link between democratic processes and economic instability (V.J., Facebook). Similarly, business-sector commentary in media framed fiscal reform as a destabilising factor: "*Redistributive reforms are being advanced without any evidence of productive return*" (A.P., media). The rhetorical form often took the shape of contrast or contradiction—juxtaposing policy intent with adverse consequences, as in: "*This reform was meant to reduce inequality; it is producing labour market distortion*" (D.A., Facebook).

Importantly, this discourse did not merely convey dissatisfaction but produced a narrative of institutional fragility. Political actors were not seen as neutral managers of complexity, but as misaligned with economic rationality. This delegitimation did not extend to all institutions uniformly — central banks and international bodies were often spared — but national political elites were repeatedly positioned as destabilising agents within an already precarious system.

Systemic Exposure and Contingent Sovereignty. A second pattern, found across categories such as *global conflicts and economic consequences*, *vulnerabilities of globalised interdependence*, *unpredictability of international decisions*, and *systemic rupture messages*, revolves around a logic of exposure. It portrays Lithuania — and small economies more generally — as structurally vulnerable due to their embeddedness in volatile global networks. Here, insecurity arises not from internal mismanagement but from asymmetric power relations and cascading global risks.

This discourse was prevalent in both datasets, though framed differently: media tended to describe such exposure analytically, while Facebook posts expressed it with strategic fatalism. For example, one author stated: "*Lithuania does not participate in rule-making — it absorbs consequences*," evoking the country's peripheral position in global governance (R.V., Facebook). Media texts echoed this with statements such as: "*The collapse of German industrial orders could ripple into the Baltics within weeks*," establishing a causality chain beyond national control (anonymous, media).

The emotional texture of this pattern was one of constrained agency: threats were recognised as real, urgent, and often unavoidable. Key rhetorical motifs included "*ripple effects*," "*external shocks*," and "*geopolitical fragmentation*." The

language moved between metaphor (waves, cracks, tremors) and strategic vocabulary (dependencies, spillovers, exposure). The discursive outcome was an implicit normalisation of national fragility: the more systemic the threat, the less responsibility was ascribed to domestic actors.

Yet, this pattern also contained latent political functions. By emphasising external causality, these messages reframed responsibility — not to deny risk, but to shift blame. In doing so, they tacitly demanded new forms of national preparedness, diversification, or alliance-building, without directly stating political prescriptions.

Affective Ambivalence and Unresolved Uncertainty. The third dominant discursive pattern integrates categories such as *macroeconomic instability*, *threats to individual well-being*, *consumer-level psychological uncertainty*, and *dual narratives*. It is marked by a tonal ambivalence — neither outright crisis nor optimism, but a persistent emotional oscillation between warning and accommodation. These messages frequently describe uncertainty not just as a macroeconomic condition, but as a pervasive effect that shapes everyday behaviour and long-term planning.

In Facebook posts, this uncertainty was often framed experientially. One post read: "*Planning for more than six months ahead feels naïve — stability has become a memory*" (N.M., Facebook). In media, the language was more analytical, citing surveys or reports that showed "*consumer expectations remain below pre-pandemic levels despite nominal growth*" (anonymous, media). The structure of these messages oscillated between acknowledging positive indicators (e.g., real wage growth, export performance) and warning of hidden or future risks (e.g., inflation volatility, productivity decline).

The function of this discourse was not merely to inform, but to describe a subjective orientation toward the future. Uncertainty was not framed as a temporary deficit in information, but as a durable condition of post-crisis economies. It conditioned how individuals made decisions about consumption, mobility, family, or employment. Notably, this affective discourse was often age-neutral in language but youth-relevant in implication — suggesting, for instance, that property acquisition or career formation were postponed not for lack of resources, but for lack of confidence.

This discursive pattern also challenged the epistemic authority of official economic language. Multiple messages suggested that macro indicators failed to capture felt reality: "*Inflation may be falling, but the price of coffee and rent hasn't changed*," remarked one Facebook user (D.A., Facebook). In doing so, the pattern contributed to an erosion of communicative trust, especially among those less equipped to interpret economic abstractions.

Strategic Adaptation and Conditional Resilience. The final pattern encompassed categories such as *state intervention*, *institutional stabilisation*, *optimistic resilience*, and *public sector planning*. Unlike the previous three, this discourse framed insecurity as manageable under specific conditions, invoking policy competence, institutional foresight, or strategic alignment as counterweights to volatility.

These messages were far less frequent and typically embedded within longer commentaries. One example read: "*We cannot control global cycles, but we can prepare buffers through better fiscal targeting and export diversification*" (R.V., Facebook). Media articles echoed this view by stating that "*Lithuania's EU integration provides stability channels unavailable to non-member states*" (anonymous, media). Rather than denying insecurity, these messages repositioned it — from a threat to be feared to a challenge to be addressed.

Importantly, this discourse did not idealise the present but situated hope in institutions, strategy, or innovation. When successful, it served as a rhetorical pivot: transitioning from problem diagnosis to solution framing. However, such messages were often cautious in tone, hedged with conditions or temporal delays. Words like "*if*," "*with sufficient alignment*," or "*provided structural reform continues*" were common qualifiers.

While rarer, this discursive pattern is analytically significant because it preserves agency. In a communicative environment saturated with critique, exposure, and pessimism, these messages kept open the possibility of intentional intervention, however fragile. They also offered a language for forward-looking discourse that did not rely on denial, but on deliberation.

Summary of Findings. The analysis of 132 publicly available texts — 78 from online news outlets and 54 from public Facebook posts — revealed a dense and thematically consistent discourse of economic insecurity, marked by a convergence of structural, institutional, and affective dimensions. Using an inductive coding framework consisting of 22 message categories, the study identified four dominant discursive patterns that structure how economic instability is framed and made meaningful in public communication. These patterns — *structural delegitimation and political blame*, *systemic exposure and contingent sovereignty*, *affective ambivalence and unresolved uncertainty*, and *strategic adaptation and conditional resilience* — function not merely as thematic clusters, but as rhetorical architectures that shape how insecurity is perceived, distributed, and politicised.

The findings demonstrate that insecurity is rarely articulated as a singular crisis but is instead constructed through a layered vocabulary of uncertainty, imbalance, dependency, and blame. Across both media and Facebook content, insecurity is naturalised through repeated references to institutional inadequacy, geopolitical volatility, economic mismatch, and behavioural withdrawal. Structural critique (e.g., of fiscal reform or industrial policy) frequently coexists with macro-level threat narratives, producing a hybrid discourse in which internal and external causes of instability are not mutually exclusive but mutually reinforcing.

While media articles tended to frame insecurity within institutional registers — quoting experts, referencing statistics, and embedding critique within analytic scaffolding — Facebook posts more often engaged in reflexive, value-laden commentary. These posts frequently attributed responsibility, questioned official narratives, or proposed alternative framings. Nevertheless, the message categories themselves remained largely stable across both platforms, confirming the robustness of the inductively derived typology and highlighting the cross-platform durability of key insecurity themes.

Notably, while the research was informed by concerns about young people's experience of economic risk, explicit age-based framing was rare. However, many messages — particularly those relating to housing, employment precarity, migration, or consumer uncertainty — implicitly addressed youth-relevant dimensions of insecurity. This suggests that even in the absence of explicit generational targeting, public discourse conveys affective and material signals likely to resonate with younger audiences navigating formative life transitions.

Finally, although pockets of strategic optimism and institutional resilience were present, they were structurally subordinated to dominant patterns of disruption, criticism, and fatalism. This asymmetry raises important questions about the communicative ecology of economic debate and its potential to not only reflect but also reproduce public perceptions of fragility, distrust, and constrained futures.

3. Evaluating the Validity of Discursive Patterns on Youth Economic Insecurity

Understanding economic insecurity requires more than statistical measurement — it demands attentiveness to the narratives through which such insecurity is framed, felt, and forecasted. Media discourse is not merely descriptive; it is constitutive. For youth in particular — who are simultaneously entering labour markets, forming households, and shaping political outlooks — discursive environments profoundly influence economic orientation and behavioural horizons. This section analyses four dominant discursive patterns that shape perceptions of economic risk among young people in Lithuania. Each of these patterns — structural delegitimation, systemic exposure, affective ambivalence, and conditional resilience—mobilises specific rhetorical logics and emotional registers, producing divergent effects on agency, trust, and long-term planning. By juxtaposing these discourses with empirical macroeconomic and institutional data, we assess not only the representational accuracy of the messages but their psychological and economic traction. The aim is not to judge media accuracy in a binary fashion, but to examine how discursive constructions of risk interface with institutional reality — and what this means for youth economic security.

Structural Delegitimation and Political Blame. This discourse architecture — rhetorically charged and dominant in frequency — interweaves four narrative strands: criticism of political or institutional decisions, economic policy threats, compound threats, and precarity within ostensibly successful macroeconomic contexts. At its core lies a mechanism of delegitimation: not merely stating institutional inefficiency but attributing agency and culpability to political elites. In this framing, the state is not failing by accident — it is actively mismanaging, improvising, or cynically exploiting economic policy for short-term political aims.

This framing is saturated with evaluative and affective language. In Facebook posts: "*While other countries plan, we improvise between elections*" (V.J., Facebook); "*The tax system changes with emotions, not analysis*" (D.A., Facebook); "*Institutions became political weapons*" (R.K., Facebook). Media discourse mirrors this tone, albeit more cautiously: "*Redistributive reforms are being advanced without any evidence of productive return*" (Lrytas); "*There is no strategy, just reaction*" (Lrytas).

These messages cultivate a sense of strategic myopia: reforms appear driven less by rational deliberation and more by electoral calculus. Such temporal volatility does not merely signal dysfunction — it reshapes how young people imagine their own economic futures. A political system perceived as improvisational destabilizes not just budgets or markets, but the very horizon of personal planning. Evidence from the European Youth Forum (2023) and Eurofound (2022) shows that perceived policy inconsistency correlates with lower youth trust in democratic institutions and reduced willingness to invest in local futures (e.g., housing, entrepreneurship).

Is this rhetoric empirically justified? Lithuania does exhibit signs of institutional instability in fiscal policy. The IMF (2023) Country Report notes that Lithuania has among the highest rates of year-on-year tax code amendments in the EU, complicating long-term planning. While the OECD (2024) does not report direct weaknesses in regulatory assessment, it does note that Lithuania's long-term growth prospects are hindered by low productivity gains and limited structural reform momentum. Such volatility generates real economic costs: World Bank (2022) estimates that policy uncertainty can reduce private investment by up to 12% over a 3-year horizon in middle-income economies.

Yet beneath the turbulence of discourse, Lithuania's macroeconomic chassis appears resilient. The country has maintained prudent fiscal discipline: public debt remains below 40% of GDP (European Commission, 2025), and structural deficit levels remain aligned with Stability and Growth Pact thresholds — suggesting that institutional capacity has not eroded to the extent portrayed in the discursive foreground. Moreover, Lithuania ranks above the EU median on the World Bank's Government Effectiveness Index (2024), and the Bank of Lithuania continues to enjoy high institutional credibility among market participants (European Investment Bank, 2024).

Therefore, while the media narrative reflects real risks associated with procedural and regulatory volatility, it also tends to conflate policy communication breakdowns with macro-level dysfunction. This distinction is crucial for scientific objectivity: the primary threats identified are short-term and sector-specific, not system-wide collapses.

The emotional traction of these narratives arises not from their empirical precision, but from how they compress temporal risk into an immediate psychological landscape. When reforms are portrayed as erratic, unmoored from analysis, or driven by narrow interests, young people receive a deeper message: the future is not merely uncertain — it is structurally inaccessible. This sentiment resonates with Eurobarometer (2024) findings, where Lithuania ranks among the most pessimistic EU countries regarding the Union's future, with only a small fraction expressing strong optimism.

The "compound threat" motif — where national policy unpredictability is overlaid with exogenous shocks (inflation, energy, war) — intensifies this insecurity. Nonetheless, Lithuanian SMEs and labour markets have shown moderate resilience, partly due to EU stabilization mechanisms and targeted transfers (European Commission, 2025).

Based on the empirical evidence reviewed above, this discursive pattern can be considered partially valid. It is analytically sound in identifying procedural unpredictability as a threat to youth economic agency. However, it overstates systemic fragility and under-recognizes stabilizing mechanisms embedded in EU membership and institutional independence. The discourse is not incorrect, but selectively amplifies indicators of weakness while omitting institutional buffers and macroprudential strengths.

Systemic Exposure and Contingent Sovereignty. This discursive pattern operates under the grammar of global asymmetry. Unlike the domestically oriented logics of institutional critique, here insecurity is cast as an imported condition — an inevitable consequence of Lithuania's structural entanglement in global interdependencies. Messages collected under this pattern cluster around four subcategories: global conflict spillovers, the fragility of interdependence, unpredictability in international decision-making, and the narrative of systemic rupture.

In this discursive frame, Lithuania is not a policymaker but a policy-taker. Its position within the global system is not merely peripheral in terms of influence, but ontologically exposed. This reframes sovereignty itself: not as a capacity to decide, but as a capacity to absorb and adapt. The message is less about agency than about asymmetry — where the consequences of global decisions, over which Lithuania has little said, reverberate with full force domestically. A Facebook user encapsulates this logic with bitter brevity: "*Lithuania does not participate in rule-making — it absorbs consequences*" (R.V., Facebook). This is not a call to nationalism or withdrawal; rather, it expresses a political-economic fatalism: vulnerability is endogenous to globalization when viewed from the periphery.

Media texts mirror this logic, albeit through more structured causal chains. One report observed: "*The collapse of German industrial orders could ripple into the Baltics within weeks*" (Lrytas), suggesting a macroeconomic domino effect. Terms like "*external shock*," "*geopolitical tremors*," and "*fragmented supply chains*" circulate as linguistic proxies for deeper structural dependencies. This is the language not of alarmism, but of exposure — an affective orientation that blends analytical realism with strategic resignation.

From a youth perspective, this discourse does more than communicate structural risk — it subtly reorganizes economic subjectivity. Traditional assumptions about the state as a risk-mitigating actor dissolve under this lens. If volatility is transnational and systemic, then resilience is not about planning but about improvisation. Young people, socialized into market democracies that promise merit-based advancement, are instead confronted with a moral economy of permanent readiness: adapt quickly, remain mobile, expect rupture. This reframing weakens the normative force of long-term planning — savings, mortgages, career ladders — rendering such commitments fragile or even naïve.

Is this exposure narrative empirically justified? On some levels, yes. Lithuania's economic openness is among the highest in the EU: exports accounted for over 80% of GDP in 2023 (Eurostat, 2024). Energy dependency remains a strategic vulnerability, especially in the context of regional instability. While Lithuania successfully diversified away from Russian gas after 2022, new supply chains remain price-sensitive and geopolitically brittle (IEA, 2023).

Moreover, the post-2022 global context is one of compound volatility: climate disruptions, war in Ukraine, monetary tightening cycles in core economies. Lithuania's susceptibility to external inflationary pressures is well-documented (ECB, 2024), and the Baltic States have among the highest passthrough rates from import prices to domestic CPI in the euro area (IMF, 2024).

Yet, the exposure narrative often obscures countervailing forces. EU-level stabilization mechanisms — NextGenerationEU, SURE, REPowerEU — have provided buffers that mitigate external risks, especially for youth-facing sectors (education, employment, mobility). The European Commission (2025) notes that Lithuania has among the highest youth participation rates in cross-border education and training programmes, which enhance labour market adaptability.

The exposure discourse also risks normalizing inaction — not just among policymakers, but within the broader cultural imaginary. If systemic fragility is presumed, then mitigation becomes a matter of adaptation rather than structural reform. However, this overlooks the active institutional strategies Lithuania has undertaken. Its sovereign risk premium remains low, suggesting confidence among international investors. Fiscal parameters are not only stable but strategically

managed to preserve shock absorption capacity. Labour market institutions, too, have demonstrated agility — particularly in upskilling and youth employment initiatives — comparing favourably to other small open economies (EIB, 2024).

In sum, this discourse of systemic exposure is partially valid but structurally selective. It captures real dependencies and macro-volatility yet underemphasizes institutional buffers and the strategic latitude available to a small EU state. The fatalism embedded in such messages may erode youth confidence not because risks are fabricated, but because resilience is narratively excluded.

Affective Ambivalence and Unresolved Uncertainty. If structural blame and systemic exposure frame insecurity as externally imposed, this third discursive pattern turns inward — toward the affective landscape of the individual. Ambivalence, not alarm, is its dominant register. Rather than assert crisis or resolution, it narrates instability as an *emotional habitus*: a learned disposition of navigating the future without reliable coordinates.

Discursive data cluster around four thematic zones: macroeconomic volatility, subjective risk perception, dissonance between indicators and lived experience, and temporal short-circuiting. Together, these form a mood of strategic hesitation — where long-term planning is perpetually deferred, not necessarily due to resource scarcity, but due to anticipatory doubt.

A Facebook user distils this sensibility with striking clarity: "*Planning for more than six months ahead feels naive stability has become a memory*" (N.M., Facebook). Here, temporal scope is not just shortened; it is emotionally recalibrated. The past is remembered as stable, the present as unstable, and the future as unknowable. This structure of feeling pervades how individuals engage with markets, work, and family. Risk is no longer an exceptional event, but a quotidian companion.

Media discourse reflects this mood in a more technocratic idiom. *Reports observe, for instance, that "consumer expectations remain below pre-pandemic levels despite nominal growth"* (Delfi, media). This gap — between indicator recovery and behavioural restraint — marks the core of affective ambivalence. It is not that individuals reject statistics; rather, they experience statistics as *insufficient* to explain their reality.

This gap has epistemic implications that extend beyond technical misalignment. It erodes what Jürgen Habermas might call communicative rationality — the shared interpretive frameworks that allow public meaning-making through institutional language. When macro indicators repeatedly fail to resonate with lived experience, they lose their capacity to organize consensus or inform rational expectations. Particularly for youth, whose economic imaginaries are still information, this can produce more than just scepticism — it can engender a semi-permanent state of cognitive dissonance. Over time, this breeds a quiet but corrosive disengagement from official discourse: not outright rejection, but hermeneutic fatigue — a learned mistrust in the promise that the future will resemble the curve of a trendline.

Empirically, there is support for these sentiments. While headline inflation declined across 2023–2024 (ECB, 2024), core goods and services in urban areas — particularly housing, food, and transport — remained elevated. Eurostat data (2024) show that Lithuania's housing cost overburden rate for youth (aged 15–29) remains among the highest in the EU. Simultaneously, surveys conducted by Eurofound (2023) indicate that Lithuanian youth report one of the lowest levels of financial confidence in the euro area, despite above-average employment rates.

This creates an epistemic tension: official macro-narratives suggest stabilization, yet experiential metrics signal something closer to stasis. Wage growth without purchasing power, employment without security, investment without trust — these juxtapositions form the cognitive dissonance at the heart of this pattern. It is not a crisis in outcomes, but in *interpretability* — the ability to translate technical signals into existential bearings. In this sense, economic governance faces a legitimacy challenge not due to error, but due to disconnection. What is needed is not merely better data, but a richer hermeneutics of policy — one that accounts for perception, memory, and temporal disposition as real economic forces.

Importantly, the discursive tone is not oppositional, but unresolved. It does not demand structural change nor deny improvements. It wavers — between accommodation and anxiety. Such ambivalence is not apathy; it is a rational effect in a system whose signals are multivocal. For youth navigating post-pandemic, post-inflation economies, this oscillation is not a weakness of will, but a form of resilience — a conditional readiness calibrated to unstable horizons.

In conclusion, the discourse of affective ambivalence reflects a real and theoretically legible disjunction between macroeconomic metrics and subjective economic agency. It is neither false consciousness nor misinformation. Rather, it reveals the interpretive gap that opens when data recovery outpaces emotional recovery. The instability is not only in the system — it is in the ability to narrate the system in terms that matter.

Strategic Adaptation and Conditional Resilience. In contrast to discourses of blame, exposure, or ambivalence, this final pattern repositions economic insecurity not as a deterministic fate but as a contingent challenge. Its epistemic logic is pragmatic rather than fatalistic: volatility is real, but it can be mitigated. This mode of discourse is defined by the invocation of institutional capacity, policy foresight, and adaptive governance. It does not dismiss risks but rather insists that they are navigable given adequate tools.

Empirically, this pattern is the least frequent across the dataset, but conceptually, it carries disproportionate weight. In an affective environment dominated by pessimism and mistrust, even infrequent expressions of resilience carry outsize symbolic function. A Facebook user writes: "*We cannot control global cycles, but we can prepare buffers through better fiscal targeting and export diversification*" (R.V., Facebook). The tone here is not naively optimistic but conditionally hopeful — anchored in strategy.

Media texts occasionally mirror this framing, though often subsumed within broader narratives. One article note: "*Lithuania's EU integration provides stability channels unavailable to non-member states*" (Delfi). The message is clear: embeddedness in institutional architectures — European governance, fiscal compacts, regional markets — can buffer domestic economies against external tremors. Here, integration is not merely symbolic but functional; sovereignty is rearticulated through alliances.

This discourse introduces a performative shift — from problem description to action orientation. It does not merely inform; it configures a mindset. In an era where algorithmic governance and media cycles often favour immediacy over deliberation, the capacity to articulate future-facing strategies is itself a discursive intervention. Strategic discourse, even when speculative or provisional, sustains the infrastructure of democratic hope. Unlike prior patterns that linger in diagnosis, this model proposes mechanisms: structural reform, fiscal buffers, export diversification, or industrial upgrading. It does so with hedged language — frequent use of qualifiers such as "*if*," "*with alignment*," or "*assuming continuity*" — but this linguistic caution enhances rather than weakens credibility. These modalities of restraint signal maturity: the understanding that effective agency is not heroic spontaneity, but cumulative competence. The message is not that success is guaranteed, but that agency remains viable — and that viability, though conditional, is itself politically generative.

Analytically, this discourse realigns the temporal axis. Rather than compressing future imaginaries into fear or detachment, it expands the horizon of plausibility. Planning regains semantic legitimacy. If earlier discourses suggested that long-term planning had become irrational, this pattern reclaims temporality as a strategic terrain. What matters is not certainty, but conditional orientation.

Empirical evidence supports this cautiously resilient framing. But it also invites a deeper interpretive claim: resilience is not merely a macroeconomic aggregate, but a temporally structured form of governance. It implies state capacity not only to react, but to anticipate — to convert uncertain futures into governable domains. Lithuania's fiscal rules remain well within Stability and Growth Pact thresholds (EC, 2025). National strategic documents, such as the 2023 Innovation and Industrial Transformation Plan, articulate clear frameworks for long-term upgrading. The Lithuanian labour market has shown notable agility in absorbing shocks, with youth unemployment rates falling below the EU average in 2024 (Eurostat, 2024). Furthermore, investments from NextGenerationEU funds have targeted youth-oriented sectors — digital upskilling, green employment, and educational mobility — providing infrastructure not just for recovery, but for renewal.

However, the conditional nature of this resilience cannot be overstated. These strategies require consistency, coordination, and public trust — each vulnerable to political cycles, external disruptions, or institutional fatigue. The rhetorical caution embedded in this discourse is itself diagnostic: resilience is not just an outcome but a fragile political project.

Ultimately, this pattern reintroduces deliberative agency into a discursive landscape often clouded by affect and asymmetry. Its rarity makes it no less vital. By naming contingency rather than determinism, it offers not a guarantee, but a grammar of response. For youth navigating late-modern uncertainty, such language matters: not because it denies volatility, but because it furnishes a syntax for engaging it.

Taken together, the four discursive patterns form a layered economy of meaning in which youth insecurity is not only named but shaped. Structural delegitimation corrodes institutional trust and replaces rational expectation with political scepticism. Systemic exposure displaces agency onto exogenous structures, reinforcing passivity under the guise of realism. Affective ambivalence generates a temporal flattening in which planning loses normative weight, while conditional resilience — though rare — offers a grammar of future-oriented agency. Crucially, these patterns are not mutually exclusive; they co-exist and interact, often within the same media environment, producing an unstable semiotic terrain. When discourse outpaces or distorts empirical fundamentals, it can magnify volatility perception and weaken socio-economic coordination. Conversely, when narrative aligns with adaptive strategy, it can restore a sense of deliberative control. The stakes, then, are not just semantic — they are structural. For a generation navigating high uncertainty, how insecurity is told becomes part of how it is lived.

4. Discursive Economies of Emotion: Psychological Mechanisms and Economic Behavioural Outcomes

While much attention is paid to what media say about economic insecurity, equal weight must be given to how such messages shape economic subjectivity. Discourses are not inert descriptions; they are affective devices that condition per-

ception, judgement, and action. For youth — whose economic roles and expectations are still under formation — these discursive patterns function not only as information but as ambient norms: what to fear, what to postpone, what to hope for.

This section explores how the four dominant discursive models identified earlier — delegitimation, exposure, ambivalence, and conditional resilience — activate specific psychological mechanisms. Drawing on behavioural economics and political psychology, we assess how each narrative registers in cognition and emotion, and how these affect downstream economic behaviours such as saving, investing, consumption, and long-term planning.

Rather than treating discourse as epiphenomenal, we approach it as structurally formative. Emotional economies are not separate from market economies — they are embedded within them. Understanding how discourse configures affective orientation is thus essential for interpreting the full economic consequences of informational environments.

Structural Delegitimation and Political Blame. Among the discursive patterns shaping perceptions of economic insecurity, structural delegitimation is arguably the most corrosive in its psychological effects. By portraying domestic institutions not merely as ineffective but as actively misaligned with public interest, this discourse generates a durable emotional architecture that reorganises how young individuals relate to the economy. What is at stake is not just the credibility of individual policies, but the intelligibility of the institutional order itself.

The primary psychological mechanism here is institutional distrust, a phenomenon widely acknowledged as corrosive to democratic and economic functioning (Tabellini, 2010; OECD, 2017). When economic governance is framed as politically motivated improvisation, rather than as a rule-based system, young people begin to internalise the idea that rational planning is structurally futile. This generates what Seligman (1975) termed learned helplessness — a condition in which individuals cease proactive adaptation because systemic response seems arbitrary or adversarial. The result is disengagement: not only political, but economic. If the state is not a reliable partner, then long-term economic behaviours — saving, investing, risk-taking — lose normative legitimacy.

Such effects are not theoretical. According to Eurobarometer (2024), trust in Lithuanian national institutions among youth is among the lowest in the EU. This is not simply an attitudinal variable; it translates into observable behaviours. Public uptake of state-sponsored pension and savings schemes among the under-30 population remains low, and informal employment continues to be more prevalent among youth than among older cohorts (Eurofound, 2023). Delegitimation thus produces a behavioural ecosystem marked by precaution, avoidance, and short-termism.

Another mechanism is the erosion of collective efficacy, or the belief that shared problems can be addressed through collective instruments (Sampson et al., 1997). This is especially critical in contexts where economic security is, in fact, partially mediated by shared infrastructures — education systems, labour market regulation, social insurance. Delegitimation undermines the social grammar that makes those instruments function. Where trust fails, so does coordination.

Moreover, sustained exposure to delegitimising narratives induces cognitive fatigue. When public discourse becomes saturated with contradictory, accusatory, or nihilistic frames, the interpretive labour required to navigate economic decisions increases. This can lead to decision inertia, where individuals avoid economically consequential commitments not because they lack options, but because they lack interpretive confidence. In this sense, the discursive environment becomes a constraint on rational agency.

These effects are particularly acute for youth, who are not only more sensitive to institutional signals but are also entering the economy at a moment when the stakes of long-term decision-making — education, housing, family — are front-loaded. If the institutional environment is cast as hostile or incoherent, then retreat into individualised, defensive economic postures becomes not just rational, but inevitable.

What makes this discursive pattern especially potent is its recursive nature. The younger people disengage from state structures, the more those structures appear ineffective — creating a feedback loop that reinforces institutional fragility. In this sense, structural delegitimation is not merely a discourse about insecurity; it is a generator of insecurity itself.

Affective Ambivalence and Unresolved Uncertainty. The third discursive pattern — affective ambivalence — differs from overt blame or exogenous fatalism in that it sustains uncertainty as a lived, psychological atmosphere. It is not built on categorical crisis or denial, but on oscillation: a semiotic rhythm of cautious optimism followed by implicit warning. Youth, situated developmentally at a threshold of planning and risk-taking, are especially attuned to these tonal shifts. The affective texture of this discourse is not incidental. It generates specific psychological mechanisms that filter economic meaning and condition action — or, crucially, inaction.

The primary mechanism here is anticipatory anxiety, a future-oriented unease rooted in the unpredictability of long-term outcomes. While moderate uncertainty can incentivise prudent behaviour, chronic uncertainty impairs planning and produces what Kahneman and Tversky (1979) called loss aversion under ambiguity. Faced with fluctuating signals — reports of wage growth alongside persistent inflation, or positive export trends amid global instability — young people may forgo economically rational decisions (e.g., investing, switching jobs, buying property) in favour of perceived security, even when the latter carries opportunity cost. This explains the rise in precautionary saving and short-term employment contracts among the under-30 population (IMF, 2024).

A second mechanism is emotional incoherence — a difficulty in sustaining narrative coherence amid contradictory economic cues. This resembles what psychological research terms cognitive-emotional dissonance (Festinger, 1957; Carleton et al., 2012). When individuals are repeatedly told that "the economy is growing" but experience persistent personal financial strain, the emotional result is confusion, not confidence. This weakens the link between macroeconomic indicators and behavioural activation. In other words, if nominal wages rise but rent and food prices remain high, the individual may reject macro-data as irrelevant. This rejection is not irrational — it is contextually adaptive. However, it leads to informational disengagement, where youth stop consulting economic forecasts or disregard financial education campaigns (OECD, 2021).

Affective ambivalence also cultivates what social psychologists term delay discounting — the tendency to devalue future rewards under conditions of uncertainty (Frederick et al., 2002). Empirically, this is associated with impulsive spending, job-hopping, or avoidance of pension participation — all prevalent among younger cohorts in uncertain economies. Here, uncertainty does not just reduce confidence; it reconfigures temporal preferences. The long-term becomes cognitively inaccessible.

Crucially, this discursive pattern also affects how youth evaluate the epistemic authority of economic institutions. When the tone of economic messaging is ambivalent or internally contradictory, institutional credibility erodes not due to ideological hostility, but due to semantic exhaustion. Youth may stop believing not because they disagree, but because they no longer understand. This opens space for alternative epistemologies — social media finance influencers, peer narratives, crypto-utopianism — which often offer clarity at the cost of accuracy.

In summary, affective ambivalence generates a multi-layered psychological response: anticipatory anxiety, emotional incoherence, discounting of delayed outcomes, and epistemic drift. These shape consumption, investment, and employment behaviour in subtle but measurable ways. Critically, this pattern does not require misinformation or pessimism to exert its effects. The very *structure* of ambivalence — its tonal instability — undermines interpretive confidence. For youth, this may be the most insidious form of insecurity: not dramatic rupture, but ambient irresolution.

Strategic Adaptation and Conditional Resilience. The final discursive pattern — strategic adaptation — offers a rare counterpoint to narratives of blame, exposure, or affective disarray. It reframes economic insecurity not as an irreversible consequence of either institutional failure or systemic exposure, but as a manageable condition. In this sense, it invokes a distinct epistemology: neither denialist nor alarmist, but pragmatic-rationalist. The dominant effect here is not confidence, but conditional resolve — an emotional stance that depends on institutional foresight and the perceived availability of credible tools.

The key psychological mechanism produced by this discourse is perceived collective efficacy — the belief that institutions can act coherently in the face of uncertainty (Bandura, 2000). For youth, this belief does not eliminate anxiety but recalibrates it. Economic risk is not denied; it is rendered legible through policy language. This has a measurable impact on behaviour. According to OECD (2023), youth in countries with high institutional trust and strategic signalling are more likely to participate in formal saving, education planning, and long-horizon job mobility. These are not merely individual strategies — they are embedded acts of macro-trust.

Another mechanism is the activation of future-oriented agency. When discourse presents institutions as capable of buffering shocks or guiding transitions — via EU funds, digitalisation policies, or industrial strategies — youth are more likely to engage in goal-directed behaviour (Heckhausen et al., 2010). This includes not only economic participation but also affective alignment: a willingness to invest identity and aspiration in societal trajectories. Strategic discourse thus links behavioural motivation with what Giddens (1991) might call ontological security — the sense that the future is not chaotic, but conditionally intelligible.

What makes this pattern psychologically distinct is that it reclaims time as a space for agency. Whereas prior discourses collapsed the future into a site of anxiety or ambiguity, strategic discourse reopens temporality to planning. The long term becomes thinkable again — not as a promise, but as a conditional project. Youth respond by reinvesting in projects with deferred returns: education, housing, pension participation (IMF, 2024). In turn, these behaviours are not only economically productive; they are symbolically integrative — they embed individuals into institutional time.

Critically, strategic adaptation provides a semantic infrastructure for trust. It does not assume that institutions are perfect, but that they are improvable, navigable, and responsive to foresight. This shifts the emotional valence from fear to vigilance, from retreat to recalibration. In this view, youth economic agency is not framed as heroic self-reliance, but as co-authored action: enabled by public foresight, conditional on procedural credibility.

However, this discursive mode is inherently fragile. Its efficacy depends on discursive consistency and performative credibility. If institutional language shifts erratically or implementation lags behind rhetoric, the perceived gap can induce backlash effects — what public policy theorists term credibility decay (Drazen and Masson, 1994). Worse, failed strategic messaging can induce cynicism deeper than that generated by silence, since disillusionment emerges not from absence but from perceived betrayal of competence.

In sum, strategic adaptation does not simply offer emotional reassurance — it operates as a cognitive affordance structure. It furnishes interpretive clarity, anchors future orientation, and sustains institutional trust under volatility. By modelling a discourse that acknowledges risk while preserving agency, it defines a rare space of rational optimism in a political economy increasingly defined by uncertainty.

Discursive Constructions and Economic Action: A Critical Synthesis. The four discursive models analysed — Structural Delegitimation, Systemic Exposure, Affective Ambivalence, and Strategic Adaptation — do more than merely describe states of economic uncertainty. They configure emotional grammars, behavioural predispositions, and institutional expectations. As such, these are not simply media tropes, but socio-cognitive infrastructures that shape and constrain youth economic agency. In the context of Lithuania's post-pandemic and geopolitical exposure, these patterns help construct what Bourdieu (1990) might term a "habitus of insecurity": a structured way of feeling, thinking, and acting that is deeply inflected by discourse.

Crucially, the models are not symmetrical in their prevalence or influence. Structural delegitimation and systemic exposure dominate both quantitatively and affectively. They articulate high emotional valence — anger, distrust, fear — and mobilise language that frames risk as externally imposed or internally mismanaged. These patterns engender what Hirschman (1970) described as the logic of exit over voice: individuals withdraw emotionally or behaviourally from institutions rather than contesting or reforming them. Youth, perceiving democratic inefficacy or global helplessness, may opt for inward-facing strategies: emigration, informal employment, or political apathy (Eurofound, 2022).

Affective ambivalence, though less overtly dramatic, may be even more insidious. By sustaining a rhetorical tension between growth and fragility, it induces what psychologists call *learned uncertainty*—the chronic inability to anchor expectations (Grupe and Nitschke, 2013). Behaviourally, this translates into planning paralysis, deferral of key life milestones (e.g. home ownership, childbearing), and susceptibility to alternative epistemologies (e.g. populist or conspiratorial economic narratives). The economic consequences are non-trivial: compressed consumption cycles, under-investment in skills, and lower financial system participation (OECD, 2021).

Strategic adaptation, by contrast, functions as a discursive minority — but one of disproportionate value. It does not deny risk but reconstructs it as knowable and manageable through institutional foresight. Unlike the other models, it invokes agency under constraint (Sen, 1999): the capacity to act meaningfully despite structural limitations. This has implications for youth economic behaviour that are both motivational and relational. Motivationally, it fosters long-horizon decisions such as educational commitment, pension participation, or entrepreneurial exploration. Relationally, it repairs the affective contract between citizens and institutions. To visualise these divergent effects, we can summarise the models in Table 2 below:

Table 2. Discursive Patterns and their Effects on Youth Economic Behaviour

Discursive Pattern	Dominant Affect	Temporal Orientation	Institutional Relationship	Economic Behaviour Induced
Structural Delegitimation	Cynicism, alienation	Compressed	Distrust, disengagement	Exit strategies, informal economy
Systemic Exposure	Fatalism, anxiety	Collapsed	Externalisation of agency	Savings hoarding, emigration, avoidance
Affective Ambivalence	Confusion, paralysis	Oscillating	Semantic erosion	Planning deferral, risk aversion
Strategic Adaptation	Conditional resolve	Reclaimed	Trust contingent on foresight	Long-term investment, institutional return

These findings suggest two critical trajectories:

1. Individualized economic adaptation. The dominant discourses — delegitimation, exposure, ambivalence — reorient youth towards strategies that minimise vulnerability at the cost of systemic integration. These include delayed household formation, increased reliance on familial support networks, or migration to perceived "stable" economies. These strategies are rational within a horizon of risk minimisation but economically suboptimal at scale: they reduce domestic aggregate demand, distort labour supply, and underutilise human capital.

2. Systemic institutional recalibration. Discursive saturation in pessimism erodes the communicative authority of economic institutions. When central banks, ministries, or statistical agencies fail to convey plausible futures, they risk becoming irrelevant to affectively disengaged publics. As Giddens (1991) argues, modern institutions rely not merely on coercion or efficiency, but on the routine reproduction of trust. A discourse regime dominated by exposure and ambivalence undermines this process. Conversely, even modest insertions of strategic discourse can repair the epistemic link between individuals and systems.

The implications are normative as well as analytical. Youth are not just passive recipients of economic policy — they are interpretive actors navigating emotionally charged environments. If discourses frame the future as inaccessible, then even optimal policy will fail to mobilise action. This underscores the importance of narrative alignment: between macroeconomic signals and lived experience, between institutional design and public affect. Strategic discourse, though rare, offers a model for this alignment. It integrates emotional plausibility with institutional accountability.

To conclude, economic discourse is not merely representational — it is constitutive. It shapes not just what people know, but what they feel they can do. In the case of youth economic insecurity, discursive form is inseparable from economic function. If institutions wish to restore agency, they must also restore intelligibility. The capacity to narrate uncertainty as manageable may well be the most powerful policy tool in the present conjuncture.

This section has demonstrated that discursive framings of economic insecurity are not neutral descriptors but active mediators of psychological orientation and behavioural choice. Structural delegitimation and systemic exposure dominate in prevalence and impact, displacing agency and compressing future imaginaries. Affective ambivalence, though more subtle, erodes temporal coherence and epistemic trust, creating latent deterrents to long-term planning. By contrast, strategic adaptation — while rarer — reintroduces intelligibility and agency, offering a discursive infrastructure for proactive economic engagement.

Critically, these discursive patterns are not merely interpretive — they are performative. They shape how youth internalise economic risk, calibrate trust, and enact participation. As shown in Table 2, each model channels distinct emotional valences into corresponding economic behaviours. These behaviours, in turn, produce divergent macroeconomic effects: fragmentation versus integration, consumption compression versus investment mobilisation, exit versus civic embeddedness. Understanding the affective architectures of discourse is thus indispensable for any policy aiming to restore not only growth, but trust and social cohesion.

5. Constructive Counter-discourses and Institutional Futures

Prevailing economic discourses, as demonstrated, often function not merely as reflections of instability but as amplifiers of affective precarity and behavioural withdrawal. Yet discourse is not a deterministic force — it is also a site of possibility. This section explores whether alternative narrative configurations can mitigate perceived insecurity and activate forward-looking agency among youth. Rather than proposing a naïve optimism, we ask whether it is possible to craft narratives that remain empirically grounded while restoring interpretive coherence and institutional trust. Drawing on psychological theory, economic communication, and governance studies, we identify conditions under which discursive interventions may be not only plausible but necessary. If fear erodes action, then clarity — even conditional — may restore it. The goal is not discursive engineering, but reflexive recalibration: to reimagine economic language as a public good. In doing so, this section confronts a paradox—can realism coexist with hope, and if so, on what terms?

5.1. Discursive Reversibility: Can Economic Language Empower?

The premise that discourse shapes economic behaviour invites a more provocative question: if language can disempower, can it also empower? This reversibility is not merely rhetorical. It goes to the heart of how individuals and collectives construct economic futures. Youth, in particular, inhabit discursive ecologies that shape what is thinkable and doable. If dominant patterns of delegitimation, exposure, and affective ambivalence compress expectations and degrade trust, then counter-discourses — structured around coherence, intelligibility, and conditional optimism — may function as a kind of socio-cognitive infrastructure for resilience.

The notion of discursive empowerment draws from both sociolinguistics and behavioural economics. From the former, it inherits the insight that language performs it not only describes, but enacts social realities (Austin, 1962; Fairclough, 2003). From the latter, it draws on the concept of expectations anchoring (Gennaioli et al., 2015), suggesting that individuals make decisions not only based on hard data but on how future conditions are linguistically framed. Research shows that communication style — especially framing and affective tone — can significantly alter consumption, investment, and savings behaviour (Shiller, 2017).

To empower through discourse, three conditions are essential: semantic coherence, temporal re-integration, and institutional referentiality. Semantic coherence: economic communication must form a recognisable structure of meaning. Fragmented or contradictory messaging erodes trust. For example, a government cannot simultaneously celebrate wage growth while ignoring inflation's erosion of purchasing power. Coherence enables individuals to reconcile macro and micro realities and to locate themselves within plausible economic trajectories. Studies in policy communication suggest that consistent framing increases the salience and credibility of policy messages (OECD, 2019). Temporal Re-integration: empowering discourse must restore the future as a space of rational planning. Current dominant narratives often collapse the temporal horizon, portraying long-term action as futile. Yet hope, as a cognitive function, is inherently temporal

(Mische, 2009). When young people perceive no stable trajectory, they are less likely to invest in education, pensions, or family formation. Conversely, narratives that acknowledge volatility but reaffirm directionality — e.g. transition pathways, structural reforms — can cognitively re-enable planning (Van Loon and Aaltonen, 2020). Institutional Referentiality: trustworthy discourses must be grounded in institutional capacity. Optimism untethered from credible governance risks degenerating into propaganda. Effective empowering narratives therefore function dialogically: they build on what institutions can plausibly deliver and invite reciprocal engagement. This is what Giddens (1991) terms the "reflexive project of modernity": the capacity of institutions to narrate change while remaining responsive to public perception.

Empirical examples reinforce the viability of empowering discourse. For instance, Finland's youth-targeted economic education programmes, which combine narrative clarity with structural realism, have been shown to improve not only financial literacy but future-oriented behaviour (OECD, 2020). Similarly, the European Commission's strategic narrative around *NextGenerationEU* linked investment funding to clearly articulated goals (green transition, digitalisation) with measurable milestones — thereby enhancing narrative credibility and activating engagement.

Yet discursive reversibility is not guaranteed. It requires institutional commitment to communicative rationality and narrative discipline. Mixed messages — whether due to political fragmentation or bureaucratic opacity — can sabotage even well-intended discourse. Moreover, excessive technocratic language may alienate audiences, particularly youth, who often seek affective resonance alongside analytic clarity.

Thus, empowerment through discourse entails more than strategic messaging. It requires a conceptual shift in how economic communication is understood — not as a transmission of facts, but as a co-construction of futures. This implies a dual responsibility: institutions must speak in ways that are semantically and affectively legible, while publics must remain reflexive interlocutors rather than passive recipients.

To conclude, economic language can empower when it constructs not only plausible accounts of risk, but also credible grammars of response. In a context where many young people experience a dissonance between economic data and lived precarity, the task is not to deny difficulty but to narrate it in ways that sustain agency. Discursive reversibility is thus both an empirical possibility and a normative imperative.

5.2. Data Reframed: When Optimism is Statistically Defensible

If discourse shapes expectations, then data — its presumed substrate — cannot be viewed as neutral either. Numbers do not speak for themselves; they are interpreted, contextualised, and often instrumentalised. The framing of economic indicators plays a critical role in determining whether they produce anxiety or assurance, withdrawal or mobilisation. This section asks: when, and how, can economic data be legitimately used to construct a forward-looking, empowering narrative?

At the heart of this question lies a paradox. Lithuania's economic fundamentals — fiscal discipline, labour market adaptability, EU integration — have often outperformed peer countries. Public debt remains below 40% of GDP (European Commission, 2025), youth unemployment dropped to 8.9% in 2024 (Eurostat, 2024), and wage growth, despite inflationary pressures, has been real and persistent. Yet public discourse, particularly among youth, remains marked by pessimism and distrust. Why?

Part of the answer lies in the rhetorical asymmetry of data usage. Negative indicators — such as inflation or housing costs — are affectively immediate and frequently personalised. In contrast, positive indicators are abstract, delayed in impact, and often communicated in technocratic registers. As Kahneman and Tversky's (1979) prospect theory suggests, losses loom larger than gains. Without narrative contextualisation, even robust data fail to counterbalance perceived instability.

One way to reframe data constructively is through comparative benchmarking. For instance, presenting Lithuania's inflation trajectory not in isolation but in relation to regional peers reveals a convergence to EU norms by mid-2024 (ECB, 2024). Likewise, EU structural fund absorption rates — often ignored in mainstream discourse — highlight targeted resilience investments in education, healthcare, and youth employment (European Commission, 2024b).

Another technique involves embedding data within temporal storylines. Instead of announcing wage increases as isolated events, communicators could frame them within medium-term trajectories: "Over the past five years, real net wages for under-30s have increased by 17%, outpacing inflation by 4 percentage points" (Statistics Lithuania, 2024). Such longitudinal framing enables individuals to map themselves within broader economic processes, reinforcing a sense of progress.

Finally, statistical framing should acknowledge vulnerability without capitulating to it. Communicating uncertainty with probabilistic nuance — e.g. confidence intervals, scenario planning—can increase credibility rather than diminish it (Gigerenzer et al., 2007). Strategic transparency, rather than mere reassurance, fosters trust.

Importantly, reframing is not cosmetic. It constitutes a cognitive and moral act. It challenges the deficit model of communication — wherein publics are seen as lacking knowledge—and instead recognises them as capable of interpretive reasoning. Youth in particular respond to authenticity, not to paternalism. Thus, optimism becomes defensible not when it denies hardship, but when it situates hardship within a horizon of intelligible recovery.

5.3. Institutions as Narrative Actors

Discourse does not emerge in a vacuum — it is curated, mediated, and legitimated by institutions. From central banks and statistical offices to educational systems and political parties, institutional actors do more than administer policy: they construct the epistemic frameworks through which the public interprets economic conditions. This section explores institutions not as neutral intermediaries, but as active narrative agents whose communicative strategies shape the architecture of collective expectations.

Institutional narrative capacity involves more than message clarity or PR proficiency. It reflects an institution's ability to translate structural conditions into intelligible, affectively resonant, and normatively acceptable accounts. This is particularly vital in times of volatility, when publics seek not just data but sense-making. As Mörth and Sahlin-Andersson (2006) argue, governance today increasingly operates through soft instruments — standards, benchmarking, discourse — rather than coercive mandates.

Three dimensions are critical to institutional narrative function: narrative continuity, relational reflexivity, and credibility through embedded practice. Narrative Continuity: institutions gain legitimacy by sustaining coherent storylines across policy cycles. Sudden reversals or unanchored optimism damage credibility. This is evident in monetary policy communication: the European Central Bank's success in guiding expectations has hinged on its narrative consistency, even amid complex shocks (Fraccaroli, Giovannini and Jamet, 2022). Relational Reflexivity: institutions must attune their discourse to public sentiment without capitulating to populist simplification. This requires dialogical reflexivity — listening, iterating, and re-articulating narratives based on evolving public feedback (Fung, 2015). Youth trust is shaped by perceived responsiveness rather than just information supply. Credibility Through Embedded Practice: communicative trust is grounded not just in words but in demonstrable institutional performance. The credibility of a message about inclusive growth depends on visible efforts to reduce inequality, fund education, or support youth employment. Words and budgets must align.

These criteria suggest that discursive empowerment is inseparable from institutional reform. It is insufficient to simply "communicate better"; institutions must inhabit the narratives they promote. The European Union's *NextGenerationEU* initiative offers a partial example: its communications strategy explicitly linked investment goals with shared European futures and youth inclusion, lending symbolic and material coherence to the message (European Commission, 2021).

Conversely, when institutions fail to maintain discursive integrity — by over-promising, obscuring trade-offs, or engaging in crisis-driven rebranding — they contribute to narrative erosion. The long-term risk is not only cynicism but democratic disengagement. When discourse fails, publics turn elsewhere: to affective bubbles, conspiratorial subcultures, or passive resignation (Arendt, 1972).

In sum, institutions are not merely transmitters of economic data. They are meaning-making actors whose narratives shape the temporal and moral coordinates of civic life. Recognising them as such reframes communicative failure not as a media issue, but as a governance challenge. Rebuilding economic confidence thus requires not only factual accuracy but narrative authority rooted in institutional coherence.

5.4. Towards a Generative Lexicon of Youth Economic Futures

Discourses do not merely describe the economy; they delimit what futures can be imagined. Language shapes plausibility structures — sets of what is deemed thinkable, desirable, or achievable (Appadurai, 2013). If dominant economic discourses often constrain these structures through narratives of risk and retreat, then a generative lexicon becomes essential. This final analytical step examines the contours of a vocabulary that could underwrite youth-inclusive, future-oriented economic narratives without sacrificing empirical rigor.

A generative lexicon is not about replacing complexity with positivity. Rather, it seeks to redefine core economic signifiers — such as growth, resilience, risk, or investment — in ways that are intelligible to young publics and attuned to their lived conditions. The challenge is not terminological but epistemological: to develop a vocabulary that facilitates not only comprehension, but participation and projection.

Take, for instance, the notion of resilience. As currently used, it often functions as a euphemism for austerity or passive endurance. A generative redefinition would frame resilience as adaptive capacity — collective preparedness through investment in skills, infrastructure, and institutional innovation (Walker and Salt, 2006). This reframing aligns with OECD definitions that link resilience to anticipatory governance and distributed agency (OECD, 2023).

Similarly, investment should be decoupled from narrow fiscal connotations and reimagined as intergenerational resource allocation. This includes not only capital formation but human development: education, mental health, and social cohesion. Such a reframing resonates with the capabilities approach, which sees investment as enabling functionings, not just returns (Sen, 1999).

Uncertainty, too, must be rearticulated. Rather than framing it as a cognitive deficit or emotional burden, a generative lexicon would position uncertainty as an inherent feature of complex systems — manageable through scenario

planning, participatory governance, and adaptive learning (Kay and King, 2020). This linguistic shift moves from paralysis to preparation.

Equally critical is the vocabulary of value. Market-centric discourses often marginalise unpaid or long-term value creation — care work, environmental stewardship, civic innovation. Reintegrating these domains into economic discourse would broaden both analytical scope and normative commitments, especially relevant to younger cohorts whose economic identities are increasingly hybrid.

The practical implication is that economic education, policy communication, and media framing must converge on a shared semantic horizon. This is not about scripting youth optimism but enabling youth authorship. Without access to a generative lexicon, young people cannot meaningfully participate in shaping the economic imaginaries that govern their lives.

A constructive precedent can be found in New Zealand's *Living Standards Framework*, which explicitly integrates well-being metrics into national economic planning and frames fiscal decisions through long-term human development goals (New Zealand Treasury, 2021). Its success lies not in rhetorical novelty, but in institutionalising a vocabulary that makes non-monetary values visible and actionable.

In conclusion, a generative lexicon is neither decorative nor peripheral. It is central to economic agency. Words are infrastructures of possibility. Redefining them with empirical integrity and affective sensitivity is a precondition for reimagining youth economic futures in the twenty-first century.

5.5. Risks of Constructive Narratives

While constructive discourses promise psychological relief and behavioural activation, they are not free from epistemic and political hazards. Optimistic framing — if insufficiently grounded or overly strategic — can risk replicating the very disempowerment it seeks to counteract. This final subsection considers three interrelated risks: credibility erosion, discursive asymmetry, and normative capture.

Credibility Erosion through Overreach: constructive narratives, when untethered from structural realities, can backfire. If young audiences perceive strategic optimism as institutional gloss, their trust in public communication diminishes. As O'Neill (2002) argues, trust is not the product of reassurance, but of justified confidence. Youth tend to detect discursive incongruities — between communicated intent and material experience — with heightened sensitivity. The long-term damage of such misalignment is not merely discursive but institutional: it fosters cynicism and withdrawal.

Discursive Asymmetry and Silenced Vulnerability: a further risk lies in the selective amplification of positive trajectories at the expense of critical voices. When economic discourse becomes disproportionately future-oriented, structural inequalities or marginalised experiences may be rhetorically erased. This mirrors the risk of what Foucault termed "pastoral power" — a mode of governance that pacifies dissent through soft optimism. In empirical terms, youth segments outside dominant urban, educated, or digitally connected strata may find their insecurity unacknowledged by these narratives.

Normative Capture by Technocratic Logic: constructive discourse can become a vehicle for technocratic containment. If hope is always conditional on compliance — "provided reforms continue," "if alignment is maintained" — it risks becoming disciplinary rather than emancipatory. Such logics reproduce a neoliberal grammar where responsibility is individualised and structural reform becomes moralised. This critique resonates with Fraser's (2013) warning against the depoliticisation of economic discourse through managerial vocabulary.

To mitigate these risks, constructive narratives must be reflexive, pluralistic, and open to contestation. Empowerment is not produced by language alone, but by the capacity of language to accommodate dissent, ambiguity, and redefinition. Rather than scripting consensus, strategic discourse should invite co-authorship.

Thus, the task is not to abandon constructive narratives, but to design them with institutional humility and dialogical awareness. In the words of Habermas (1984), communicative action becomes emancipatory only when it recognises its own fallibility. It is this ethic of discursive accountability that can sustain hope — not as an affective surplus, but as a condition of collective reasoning.

This section has argued that economic discourse can be more than diagnostic — it can be generative. In contexts of chronic uncertainty, especially among youth, language becomes a form of governance: not merely conveying data but shaping the scope of imaginable futures. Constructive counter-discourses offer a necessary intervention, capable of restoring interpretive trust and civic agency. Yet their success is not guaranteed by tone alone. Empirical anchoring is essential; without it, optimism risks devolving into abstraction or manipulation. The reframing of data must go beyond surface recalibration — it must trace plausible trajectories that individuals can locate themselves within. Institutions, in turn, must become narrative actors, not just data providers. Their legitimacy hinges on coherence between rhetoric and demonstrable action. If language outpaces policy, trust erodes; if it lags, relevance vanishes.

A generative lexicon can expand economic participation by rendering concepts like resilience, investment, and uncertainty intelligible and actionable. This requires epistemic pluralism and attentiveness to lived realities, particularly

among youth. The task is not to simplify complexity, but to scaffold understanding. Narratives must be designed for dialogue, not decree. Strategic optimism should mobilise agency, not mask vulnerability. As this section has shown, discourses that empower are those that anticipate contestation and welcome co-authorship. But even empowering narratives have limits: they risk exclusion, overreach, and normative closure. The final analysis suggests that humility must accompany hope. The role of discourse is not to predict the future, but to make space for its construction. In this sense, constructive narratives are not only communicative strategies but ethical commitments. They point not toward certainty, but toward the shared capacity to navigate uncertainty — together.

Conclusions

This study has examined how economic insecurity is discursively produced in Lithuania's public sphere, drawing on qualitative content analysis of digital media articles and expert-authored Facebook posts. By approaching discourse not merely as a container of economic information but as an infrastructure of emotional and epistemic orientation, the analysis has identified core message types and discursive models that shape the affective experience of risk, particularly for younger audiences. The findings invite both an interpretive diagnosis and a normative reflection: how public economic discourse constructs vulnerability, and how it might instead foster navigability, trust, and coherence in an era marked by systemic uncertainty.

The messages most strongly associated with the provocation of economic insecurity were those that combined technically accurate information with emotionally charged or morally inflected language. These included recurring themes such as critiques of institutional improvisation, warnings of geopolitical exposure, systemic rupture framings, and expressions of policy volatility. Such statements were especially impactful when they departed from neutral analysis and adopted evaluative tones — of cynicism, urgency, or resignation. These messages functioned affectively rather than informatively, especially for youth navigating early life-course decisions. They undermined the conditions for anticipatory planning and recalibrated individual perceptions of economic agency toward a horizon of constant adaptation.

Media and social media messages, though divergent in tone and rhetorical style, tended to reinforce rather than contradict each other. The interaction between genres formed a dynamic of intensification: traditional media anchored insecurity in expert discourse, while social media re-circulated these framings with heightened emotionality. This interplay created a feedback structure in which narratives of fragility were affirmed across communicative spaces, producing a discursive climate where economic uncertainty came to appear ambient and enduring. The convergence of analytic pessimism and moral critique further blurred the boundary between structural risk and subjective affect, embedding insecurity within both cognition and mood.

From this inter-discursive landscape emerged four dominant models that structured how economic insecurity was articulated and absorbed: structural delegitimation, systemic exposure, affective ambivalence, and conditional resilience. Each of these discursive formations encoded not only a theory of the economy but an implicit moral psychology. The delegitimation of institutions cast the state as a destabilising actor, while systemic exposure narratives diminished perceived national agency. Affective ambivalence, oscillating between optimism and fatalism, sustained uncertainty without resolution. Only conditional resilience offered the semblance of constructive agency, yet it was rare and often heavily hedged. For youth, these models collectively defined a space of limited futurity, where the possibilities for long-term investment, social trust, or economic optimism were bracketed by competing logics of caution, irony, or detachment.

The cumulative effect of these findings points to the need for a more ethically grounded economic discourse. If discourse functions not merely to describe but to shape felt realities, then communicative responsibility entails more than factual precision. It includes tonal calibration, temporal coherence, and generational inclusiveness. A responsible economic discourse should resist affective inflation, recognise the differentiated exposures of younger cohorts, and create discursive space for plausible optimism. Such a shift does not require the evacuation of critique but a recalibration of its form: from alarmism to analysis, from resignation to reflexivity. Only through such recalibration can economically discourse function as a stabilising, rather than corrosive, feature of democratic life.

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2.2. THE RELATIONSHIP BETWEEN ADVERTISING COMMUNICATION AND CONSUMER BEHAVIOUR IN PURCHASE DECISION-MAKING

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Abstract. *This study explores the role and impact of advertising communication on consumer behaviour and purchasing decisions in the context of modern, digitally driven society. Communication plays a central role in shaping consumer choices, especially as advertising becomes increasingly emotional, sensory, and interactive. With technological development, globalization, and rising consumption, advertising has evolved beyond informational content to deeply influence subconscious decision-making processes. The* ***goal*** *of this study is therefore to analyse the significance of advertising communication in shaping consumer behaviour and influencing their purchasing decisions. To achieve this goal, the following* ***objectives*** *were set:1) to discuss the theoretical aspects of consumer behaviour and its connection with the decision-making process to buy; 2) to evaluate the impact of advertising communication on consumer behaviour; 3) to review the significance of neuromarketing research in the context of advertising communication; 4) to analyse the practical connections of advertising communication elements with consumer behaviour.*

Marketing communication, particularly advertising, interacts with consumers on rational, emotional, and sensory levels, forming values, attitudes, and actions. The research emphasizes the complexity of consumer behaviour, influenced by psychological, social, cultural, and economic factors, and highlights how advertising appeals to consumer motivation and emotional triggers. The study identifies advertising communication as a major marketing tool that shapes consumer attitudes and behaviour. Emotional elements such as imagery, music, colours, and narratives are more memorable and effective than purely rational content. Neuromarketing, a growing interdisciplinary field combining neuroscience, psychology, and marketing, offers insights into subconscious consumer reactions. An empirical quantitative survey with 359 respondents showed that while many consumers claim advertising does not influence them, their behaviour suggests otherwise. A significant portion admitted to impulsive buying and being influenced by emotional advertising or influencer recommendations. Visual elements had the highest impact, while auditory cues were largely unnoticed, despite their potential subconscious effect. This dissonance reflects the hidden impact of advertising on consumer decision-making.

Keywords*: advertising, communication, consumer behaviour, decision-making process, impact, neuromarketing.*

Introduction

Communication is crucial for society in conveying and disseminating information, and in the age of digitalization, with an increasing number of diverse distribution channels, it undergoes various transformations. Technological advancement, consumption growth, globalization, and digitalization compel the expansion of communication possibilities to achieve faster, more efficient interaction, information transmission, and knowledge dissemination. In a consumer society, the evaluation of consumer behaviour and advertising communication's influence in the context of decision-making increasingly gains new insights. Consumers, being part of a multifaceted information flow, encounter hundreds of commercial messages daily, whose primary goal is to influence their thinking, feelings, and actions. Marketing communication tools, especially advertising, operate not only at a rational informative level but also at emotional and sensory levels, shaping their behavioural models. Moreover, advertising actively forms consumer values, attitudes, emotions, and decision-making processes by utilizing not only traditional marketing communication and consumer behaviour methods but also employing neuromarketing research. Consumer behaviour is a complex phenomenon encompassing psychological, social, cultural, and economic factors that determine how individuals search, evaluate, choose, purchase, and use products or services. Considering this, marketing communication encourages consumer interest and loyalty. One of the primary forms of marketing communication is advertising, characterized by its ability to simultaneously disseminate messages to a wide audience through various channels: television, internet, press, radio, outdoor advertisements, etc.

Advertising is considered a specific area of communication between the advertiser and the potential consumer, whose conditional communication is maintained using public information dissemination tools. The impact of advertising communication on consumers is often based on emotional and sensory principles. Studies show that people remember an emotional message more often than logical information, therefore, advertising creators are increasingly using not rational arguments, but emotional symbols that evoke sensations - seeing, hearing, feeling, even associations of smell or taste. Visual elements (colours, shapes, logos), textual components (slogan, narrative, figures of speech) and sound signals (music, voice, sound effects) collectively create a compelling, memorable and consumer decision-influencing form of communication. In recent years, more and more attention has been paid to neuromarketing - an interdisciplinary field of research, combining insights from neuroscience, psychology and marketing. Neuromarketing methods (e.g., eye-tracking technologies, EEG, fMRI) allow for a deeper analysis of consumer reactions to advertising not only at a conscious, but also at a subconscious level. Such studies help to reveal which aspects of advertising cause the greatest emotional response, increase engagement or even lead to spontaneous purchasing decisions.

Considering this, the object of this study is advertising communication and its connection with consumer behaviour and the decision-making process to buy. The research goal is to analyse the significance of advertising communication in shaping consumer behaviour and influencing their purchasing decisions. The following tasks were chosen to achieve the goal: 1) to discuss the theoretical aspects of consumer behaviour and its connection with the decision-making process to buy; 2) to evaluate the impact of advertising communication on consumer behaviour; 3) to review the significance of neuro-marketing research in the context of advertising communication; 4) to analyse the practical connections of advertising communication elements with consumer behaviour. The methods of scientific literature analysis, analytical method, systematic and survey methods were chosen to carry out the research. The method of scientific literature analysis was applied to conceptually justify the object of the research and its relevance. This method was applied to systematically review and summarize previous studies related to consumer behaviour, advertising communication and decision-making. The analytical method was applied to systematically analyse the theory, concepts and relationships between advertising communication and consumer behaviour, and the systematic method was applied to integrate the research results and theoretical views of different authors on the connections between advertising communication and consumer behaviour. The survey method was applied in conducting an empirical study to find out the opinion about the impact of advertising communication on consumer behaviour and the decision-making process to buy. A structured anonymous survey was conducted using a questionnaire consisting of closed and open questions. The research data was processed and analysed quantitatively to determine the connections between advertising elements and consumer decisions.

The effectiveness of advertising is often assessed by whether it can encourage the consumer to take specific actions – for example, to purchase a product, to be interested in a brand, or to recommend it to others. Therefore, it becomes necessary to thoroughly analyse how the content, form, channel and emotional impact of advertising affect consumer behaviour at different stages of decision-making. For effective advertising, it is necessary to understand not only the rational decision-making process, but also how emotions, sensations, visual symbols and even subconscious impulses work. This study aims to thoroughly discuss these phenomena, to single out the elements of advertising impact that most affect consumer behaviour.

CONSUMER BEHAVIOUR IN THE CONTEXT OF MODERN MARKETING

The Concept of Marketing

Marketing is a broad, multi-faceted term, the concept of which has changed and is changing in response to cultural and social changes in society. Different scientists describe marketing differently at different times, although similarities remain. It can be described as a process through which organizations create value for consumers, considering their needs, while ensuring mutual benefit. In society, marketing is understood as a certain manipulation strategy that encourages people to buy (Kotler and Lee, 2007) and includes the satisfaction of human and social needs in order to provide goods or services with economic value to the market and expand the organization's relationships with consumers (Kotler, 2012). Kotler and Keller (2021) describe marketing as a social process in which both parties get what they want and need by exchanging value with others. Recent studies indicate that in today's world, where the importance of artificial intelligence, technology and data analysis is increasing, the importance of marketing digitalization is growing. Today's marketing is focused on reaching the target audience and personalized offers, which are inseparable from digital platforms (Kapoor et al., 2021), therefore, the latest concept of marketing is associated with social responsibility and sustainability. Modern marketing not only seeks to satisfy consumer needs, but also addresses broader social and ecological challenges, creating long-term value for society (Kotler, 2023). Perhaps the broadest and best reflection of current market trends is the following definition of marketing: it is the science and art of exploring, creating and delivering value to meet the

needs of the target market and generate profit. Marketing identifies unmet needs and desires. It defines, measures and quantifies the size and profit potential of the established market. For marketing to contribute to the sustainability of organizations, it must adapt to current conditions (Erden et al., 2025). Accordingly, marketing has changed over time from being considered only a field of product sales, then prioritizing customer satisfaction, emotional customer needs, and now being assigned to a stage where the focus is on technologies for humanity (AI, etc.). Consumers are addressed with more individualized and experiential efforts (Erden et al., 2025). Finally, Kotler (2023) already distinguishes the final version of marketing, which goes beyond the boundaries of the physical and digital worlds, providing an immersive experience where customers feel no difference between them. Accordingly, the concept and research of consumer behaviour are also changing.

Thus, marketing is an active business activity that provides exchanges between the manufacturer, seller and consumer. And the sale of goods and services is perhaps the most complex function in the conditions of a market economy (Čereška, 2004). Therefore, marketing, through advertising and other means of communication, must guide the buyer and speed up the buying process, and in order to be able to control and encourage that process, it is important to understand the desires, wishes, needs of consumers, in other words, consumer behaviour. One of the main goals of marketing is therefore to identify consumer needs and satisfy them. And to achieve this goal, it is important to determine why a particular product or service is purchased and the main reasons for consumption - because this is knowledge about consumer behaviour. Studies of consumer behaviour allow us to understand consumer actions, identify their needs, and predict their future behaviour.

The Concept of Consumer Behaviour

Consumer purchasing behaviour is one of the components of consumer behaviour theory, which explains consumers' purchasing habits, the reasons for their choices, and repeat purchases. Consumer behaviour is generally referred to as the decision-making process and physical actions that individuals take when evaluating, purchasing, using goods and services (Qazzafi, 2019; Rahayu & Melinda, 2017; Tassawa & Khumhome, 2023; Priyabrata & Dhananjoy, 2022; Lancaster, Reynolds, 2005; Richard et al., 2010; Khurana, Kaur, 2017). Consumer behaviour refers to the study of groups, individuals, and organizations, as well as the processes they use to select products, services, experiences, or innovations to meet their requirements and the impact on the consumer and society (Chen, Chen & Tung, 2018). Harun & Moury (2019), Mowen (1990) state that it is a process by which a consumer can choose, purchase, use, or dispose of products or services to satisfy their wants or needs. Thus, consumer behaviour is a complex phenomenon that includes the research of goods (services), their selection (Belch, Belch, 2001), and the reaction to the already purchased and consumed goods (Snieškienė, 2009; Richard et al., 2010), consumer reasoning even before the purchase of goods (services), at the time of purchase and during use (Bennett et al., 2002).

Table 1. Definitions of Consumer Behaviour

Delbert et al. (2003)	Consumer behaviour is the science of individuals, groups or organizations and the processes they use in selecting, acquiring/purchasing and disposing of a product, service, idea to meet their needs and wants.
Solomon (2004)	Consumer behaviour is an interdisciplinary field that includes psychology, social psychology, sociology, economics, and cultural anthropology.
Mowen (1990)	Consumer behaviour is the actions of people seeking to satisfy their wants and needs by buying and using goods and services.
Urbanskienė et al. (2000)	Consumer behaviour is an individual's actions related to the acquisition and use of a product, including behaviours from the emergence of a problem that may arise when acquiring a product to the reaction to an already acquired and consumed product.
Schiffman and Kanuk (1997)	Consumer behaviour is the behaviour that consumers demonstrate in searching for, using, evaluating, and rejecting products, services, and ideas.
Pranulis et al. (2012)	Consumer behaviour is an individual's actions related to the acquisition and consumption of a product, including his actions from the emergence of a problem that can be solved by the acquisition of the product to the reaction to the already acquired product.
Quester, Pettigrew and Hawkins (2011)	Consumer behaviour is a discipline that examines how and why consumers buy (or do not buy) goods and services.
Babin, Harris (2013)	Consumer behaviour can be understood as the actions, reactions, and consequences that occur as a consumer goes through the decision-making process, makes a decision, and then uses the product.
Peter and Olson (2007)	Consumer behaviour is the dynamic interaction of affect and cognition, behaviour, and environmental events through which individuals conduct aspects of their life exchanges.
Solomon (2011)	Consumer behaviour is the study of the processes involved when individuals or groups select, acquire, use, or dispose of products, services, ideas, or experiences to satisfy needs and wants.
Solomon, Bamossy and Askegaard (2002)	Consumer behaviour is the process by which individual individuals or groups select, purchase, consume and evaluate goods in order to satisfy their needs.
Engel, Blackwell and Minard (1990)	Consumer behaviour is a variety of actions related to the acquisition, consumption, and evaluation of goods, including the decision-making process.
Sandhusen (2000)	Consumer behaviour is the science of when, why, how, and where consumers buy or do not buy.

The concept of consumer behaviour is similarly described by various scientists (see Table 1). The definitions reveal two main themes of consumer behaviour: 1) the process of actions involving purchase, use, and (or) disposal; 2) it involves individual or group consumers related to goods, services, ideas, and experiences (Ling, 2015). Reviewing and evaluating the definitions provided, it can be observed that consumer behaviour is the behaviour of consumers in various situations. It is stated that consumer behaviour examines both the activities of individuals related to consumption and with inspection, the impact on other individuals, the impact from other individuals, complaints, and the return of goods. It investigates the reasons and efforts that encourage consumers to choose, purchase, consume, and liquidate an item or service to satisfy personal needs and desires. (Bakanauskas, 2006). In other words, in a broad sense, consumer behaviour is understood as a much broader phenomenon, including the search for information related to the decision to buy, consideration, the choice of a supplier of goods or services, and other actions performed before and during the purchase. This shows that consumer behaviour includes mental (psychological) decisions and physical actions arising from these decisions (Urbanskienė et al., 2000) and related to final consumption, including the acquisition, production, use, and, in some cases, disposal of products and services. Thus, consumer behaviour is focused on how individuals make decisions to spend their available resources on consumption-related items (*Consumer behaviour*, 2020). The most important goal of consumer behaviour is to find out how consumers make those decisions, what they are based on, and what determines whether certain goods and services are purchased or not.

The Origin of Consumer Behaviour Science and its Connection to other Fields of Science

The historical roots of consumer behaviour lie in marketing itself; consumer behaviour is now one of the directions of marketing, allowing to help get to know the consumer and, at the same time, for the company to act purposefully to influence the consumer and change their behaviour (Urbanskienė et al., 2000). It is a young field of science that emerged at the intersection of economics and psychology and became an interdisciplinary subject, encompassing psychology, social psychology, sociology, economics, and cultural anthropology (Solomon, 2004; Bobadilla, Ortega, Gutierrez, and Alonso, 2020), and according to some – also demography, marketing (Urbanskienė et al., 2000), even jurisprudence, history, linguistics (linguistics and semiotics), ecology, pedagogy, political science, information technology (Husić-Mehmedović et al., 2012), and has formed as a separate discipline. Thus, the closest connection of consumer behaviour is with marketing, and when it comes to scientific instruments and procedures, its closest discipline is psychology. Psychology laid the foundations for the development of consumer behaviour as a separate discipline, creating conditions for a scientific approach to consumer behaviour through many of its emerging fields. Research on many categories, such as motivation, personality traits, perception, attitudes, and beliefs, is practically impossible without utilizing all the methods, approaches, and concepts of psychology (Husić-Mehmedović et al., 2012). Part of the influence that shapes consumer choices and trends are internal processes – our thoughts, feelings, and desires (Bakanauskas, 2006); perception, learning, memory, motives, personality, emotions, attitudes (Hawkins, Mothersbaugh, 2010). After all, a consumer is a simple person engaged in activities related to the purchase of products or services. Therefore, it should not be surprising that consumer psychology examines the same questions as psychology in general: memory and cognition, affect and emotions, evaluation and decision-making, and many other topics discussed in psychological literature (Ajzen, 2018). Representatives of consumer psychology, like marketing, use concepts, theories, and conclusions from psychology, especially social psychology, to explain consumer behaviour (Bagozzi et al., 2000). It is generally agreed that consumer behaviour primarily and most importantly means the act of purchasing a particular product or service. However, this is far from the only behaviour that interests consumer psychologists. It also examines the search for information related to the purchase decision, the choice of a retail location or service provider, and other actions performed before and during the purchase (Ajzen, 2018).

The first consumer behaviour studies appeared only in the 1960s in the USA. Scientists from this country, James F. Engel, David T. Kollat, and Roger D. Blackwell, John A. Horward, and Harold F. Kassarijan, are considered the pioneers of consumer behaviour science (Bakanauskas, 2006). Before the appearance of these works and the development of the consumer behaviour direction, attention was paid not to consumption, but only to purchasing processes, sales, but not to the factors that can influence that result. Early consumer behaviour researchers relied on economic theory, according to which consumers behave rationally, i.e., objectively assess which products and services provide the greatest pleasure at the lowest price. However, later studies showed that consumer behaviour is a much more complex construct than its reduction to the level of rationality, and that consumers do not know the reason for their purchasing behaviour; in other words, there are hidden motives that drive them to behave in this way (Husić-Mehmedović et al., 2012). It was understood that not everything can be calculated based only on economic laws, that there are many other elements that determine the consumer's choice to purchase certain goods or services. Consumer behaviour is more than just buying things. Consumer behaviour includes research on how owning (or not owning) things affects consumers' lives, including the impact that material things have on the consumer's mindset about themselves and other people (Solomon et al., 2010). It began to be considered a comprehensive process, encompassing thoughts, emotions, and actions that people experience during consumption. It was noticed that the consumption process is changing. Consumers are not the only ones who think rationally when they are involved in the selection or purchase process. According to scientists, consumption is becoming increasingly emotional, and consumers are perceived as polysensory subjects who expect a more emotion- and sensation-based purchasing process (Douce and Janssens, 2013). Thus, in the 1950s, consumer behaviour studies found that consumer purchasing decisions are influenced not only by rational thinking, but also by subconscious psychological processes (Rozenkowska, 2023). In addition, a myriad of other factors can have an impact, including taste, preferences, brand loyalty, maintaining a balanced diet, health condition, specific food addictions, environmental factors, affordability, etc. (Asikhia, Ajala, Phillips, Olunuga, 2021). Accordingly, to understand the needs of individual consumers, demographic characteristics and behavioural variables, the influence of families, friends, reference groups, and society in general on consumers are examined (Zhao, Khan, and Khatib, 2021).

Consumer behaviour science has advanced significantly since its inception, but the increasingly successful application of communication and other technologies requires focusing on an even closer and more in-depth understanding of consumers within the shortest possible time frame. Undoubtedly, the most important factor in this section is the development of the internet, which has caused a revolution in the research process, information collection and use, product and service adaptation, distribution, development of relationships with partners, and so on. The so-called digital revolution provides consumers with a larger amount of accessible information, better choice, the ability to use extensive

and high-quality databases (about consumers), and increasingly diverse platforms and tools. Mobile telephony is also particularly important in this context. Along with its increasing use for commercial purposes, it also aspires to become an integrated communication, entertainment, gaming, and information system, in areas where television was previously the favourite (Husić-Mehmedović et al., 2012). Thus, consumer behaviour science must constantly seek new perspectives to be able to identify and comprehend emerging changes that determine the changing attitudes, behaviour, and lifestyle of consumers themselves, which is closely related to changes in consumer behaviour.

Factors Influencing Consumer Behaviour

In general, the main factors determining consumer behaviour are the prices of goods and services, consumer income, needs, and the information available about the properties of goods and services (which is significantly influenced by advertising and other marketing tools) (Universal Lithuanian Encyclopedia). Additional influence arises from environmental factors. Different authors identify various factors: social, economic, situational circumstances (Bakanauskas, 2006); personal, social, cultural, emotional (Roy, 2022); personal, social, cultural, and psychological (Khanthahutthee, 2017; Ibok and Etuk, 2018; Talkah, 2023); culture, subculture, demographic data, social status, reference groups, family, marketing activities (Hawkins, Mothersbaugh, 2010). All these factors intertwine and interact dynamically to shape consumer behaviour. Consumer behaviour is affected by the consumer's lifestyle, taste, social, economic, cultural, demographic environment, social status, and other factors, making everyone's behaviour unique. It also includes psychological procedures performed by consumers when they determine their desires, seek solutions to these needs, decide what to buy, evaluate information, plan, and execute these plans. Consumer purchasing behaviour is the culmination of consumer preferences, attitudes, goals, and decisions regarding consumer reactions in the market when purchasing a product. In the virtual space, five groups of factors influence consumer behaviour: consumer (hobbies, demographic traits, etc.), product (service) (packaging, price, etc.), website (design, navigation, etc.), characteristics of the retailer or intermediary (product quality, privacy and security controls, etc.), and environmental influence (culture, social influence, etc.) (Cheung et al., 2003; Richard et al., 2010; Al-Debei, Akroush, Ashouri, 2015; Hasan, 2016).

Different marketing communication tools in the virtual space are used to stimulate various consumer behaviours at different stages of their journey (Jenyo, Soyoye, 2015). Consumer behaviour in the virtual space is primarily determined by consumers' attitudes towards using technologies – computers, smartphones, or other devices, and the internet. Besides cultural factors (culture, subculture, social groups), social factors (influence groups, family, status), personal factors (age, lifestyle, personality), and psychological factors (motivation, perception, attitude) (Parsons, 2002), emphasis is placed on consumers' skills and the security, privacy, and reliability of websites (Dange, Kumar, 2012). However, some opinions suggest that consumers' attitudes towards online shopping and their behaviour are solely influenced by their past experiences and current situations, while external environment, demographic characteristics, personal traits, seller characteristics (services, products), and website quality are considered past factors that shape attitudes towards online shopping. This is supported by the role of *Google Ads*, which helps observe that search and display advertising can influence consumer behaviour now of decision-making and purchasing, affecting not the overall attitude towards online shopping but decisions related to specific goods or services, leading to conversions (Li and Zhang, 2002).

The main factors influencing consumer behaviour can be divided into two primary groups: *those that influence the consumer as a group member* and *those that influence the individual*. External factors are cultural and social, while internal or individual factors include personal and demographic characteristics, as well as psychological traits. Some scientists also distinguish economic factors (Jasiukonytė, Tamulienė, 2023). Understanding all these factors significantly reduces uncertainty when reviewing consumer consciousness processes ("black box").

Cultural factors are fundamental components of human behaviour, including consumption. It is believed that everything people know and understand as personal norms and beliefs is the result of cultural influences and is learned. People grow, learn, and adopt prevailing values from their environment and social groups, i.e., the culture they belong to (Kotler et al., 2019). Culture reflects the traditions, attitudes, beliefs, norms of behaviour, and values typical of a particular country or regional society, which are accepted within that community (Serban-Comanescu, 2019). Culture is defined as a shared set of values and beliefs that influence consumer behaviour. An individual's cultural environment can determine their choices and purchasing habits. For example, in cultures where heritage is highly valued, consumers tend to appreciate products considered authentic and of high quality. Conversely, in cultures that highly value modesty and conservatism, consumers more often choose products reflecting these values. These choices are not purely individual but are significantly influenced by the broader cultural context (Meena, 2023). Similarly, retailers must understand relevant cultural nuances to effectively meet the preferences of various demographic groups by adapting their products and marketing strategies considering cultural aspects (Meena, 2023). Cultural factors also include the influence of social classes on consumer behaviour. Social class is determined not only by income but also by various factors such as profession, education, wealth, etc. (Kotler, Lane, 2016). People belonging to the same social class generally share common

values that significantly influence their purchasing behaviour. Differences in financial status between social classes lead to different buying behaviours, with higher social classes often having different standards (Akdogan et al., 2021). Even if individuals believe they make autonomous decisions, their choices are still influenced by information or opinions provided by others. It is believed that middle and upper-class individuals often think their decisions directly impact their life outcomes, emphasizing traits of individualism and personal agency. People from lower social strata often feel dependent on their community and social structures (Akdogan et al., 2021). Consequently, consumers from lower social classes may pay more attention to price when choosing products, while higher social class consumers may prioritize product quality, features, and innovations (Al Shishani, 2020). Over time, cultural values become an integral part of personality. However, culture is a dynamic category: it changes over time and through various events. It dictates what is acceptable or not in a particular situation. It influences lifestyle and rhythm, core values, clothing, eating habits, family relationships, education, communication, and more. Marketing must be culturally sensitive and proactive, considering current cultural and societal influence trends (Husič-Mehmedovič, Kukič, **Čičič**, 2012).

Social factors related to consumer behaviour mainly involve the influence of family, reference groups, roles, and status within society. Social factors have a similar impact as cultural factors. Consumers often adopt consumption patterns from their social groups to gain approval and avoid disapproval (Yeboah, 2023), feeling the influence of other members on their purchasing decisions (Kavitha et al., 2023). Consumers are more inclined to purchase products valued in their social environment or those that reflect their status and prestige.

Reference groups (family, friends, neighbours, colleagues, etc.) play a crucial role, with family influence being particularly prominent across nearly all societies worldwide. Family is undoubtedly the most important social unit shaping individuals and continuously influencing their behaviour in all situations, including consumption. Many aspects of family life are of interest to marketers, such as the relationship between spouses, stages of the family cycle, family structure, roles within the family, and family development dynamics, which are especially evident today (Husič-Mehmedovič, Kukič, **Čičič**, 2012; Kotler et al., 2019). Two types of families influence individual purchasing behaviour: *the guiding family* (parents, siblings) and *the procreation family* (spouse and children). The guiding family shapes a person's values, beliefs, and aspirations, while the procreation family directly influences daily purchasing decisions (Kotler et al., 2019). For retailers and marketing professionals, it is important to assess the roles of family members in decision-making regarding the purchase of specific products (services) and to tailor advertising campaigns accordingly. Besides family, other reference groups also influence purchasing: opinions of friends, relatives, or simply demonstrating one's status. Consumers, observing the behaviour of their social group members, form their own, sometimes unconsciously. Additionally, individuals are influenced by groups they aspire to belong to, called *aspirational groups*, and groups whose values or behaviour they reject, called *dissociative groups* (Kotler, Lane, 2016). These groups typically have certain statuses or values that a person would like to or must embody in their life. Aspirations and desires are well represented by products promoted by influencers, often associated with the influencers' lifestyles showcased on social media, whereby it is assumed that purchasing a product brings one closer to their lifestyle. However, there are situations where a person must genuinely represent their role in society because it is expected by their social environment. For example, if a company executive drives a modest or inexpensive car, there is a high probability that business partners and clients will perceive them as less authoritative or successful compared to colleagues driving more expensive vehicles (Al Shishani, 2020). The same applies to clothing, footwear, and even watches. This is because the role a person occupies in society defines certain activities or behaviours expected of them based on their social environment. Each role is associated with a certain status that influences a person's purchasing decisions and behaviour. Such decisions show that people often choose products or services that not only meet their practical needs but also reflect their social status in society. Therefore, social factors influence consumer purchasing behaviour because, as social beings, people consciously or unconsciously adopt consumption patterns of their groups to gain approval or secure their status, prestige, and values, which in turn affects their purchasing choices.

Personal or demographic factors are among the most powerful tools for understanding and predicting consumer behaviour in various situations, including consumption. Some factors, such as age, gender, education, and wealth, are often self-evident and can be studied based on reliable statistical demographic data. Determining the average age of a specific market segment reveals that segment's interest in certain products. For example, the interest of young consumers in clothing or music products and services can be predicted quite accurately. While this data alone is insufficient, combining it with gender, education, wealth, family status, group role, etc., allows for more precise analysis and prediction of consumption patterns within certain groups. Another group of personal characteristics relates to an individual's lifestyle and personality. Lifestyle can be described as a certain behavioural tendency chosen by individuals influenced by numerous cultural, social, personal, and psychological factors (Husič-Mehmedovič, Kukič, **Čičič**, 2012). Personality traits such as self-confidence, leadership, sociability, independence, defensiveness, adaptability, or even aggressiveness can help better understand how a consumer chooses a particular product or brand (Testa, Sarti, Frey, 2019). People

may live different lifestyles (healthy living, snobbery, dedication to nature, art, or career, etc.), even when in similar economic, age, gender, and other circumstances. Since these factors vary depending on the individual, each consumer's behaviour is unique (Kavitha et al., 2023).

One of the most significant factors influencing their purchasing behaviour is age, as interests, tastes, and needs change at different life stages. Lifestyle, values, environment, activities, and hobbies evolve with age, affecting purchasing decisions (Al Shishani, 2020). For example, younger consumers are often more willing to experiment with new products and services, tend to buy products that emphasize their social status and connection with others, while older individuals may focus more on reliability, quality, and practicality, valuing stability and long-term use (Maniatis, 2016). Income also strongly influences consumer behaviour. Higher incomes provide more opportunities to choose expensive goods, while those with lower incomes often focus more on price and practicality, opting for more affordable and everyday-use products (Vega-Zamora et al., 2018). In reality, personal and demographic factors encompass many aspects and their combinations related to consumer behaviour. They are among the most variable factors. Marketing must constantly evaluate them to identify clear target audiences for sales and to continuously adapt supply in response to consumer behaviour.

Psychological factors. Human psychology is complex and difficult to predict, exerting a significant influence on purchasing decisions. Psychological factors mainly include four key types: motivation, perception, attitude (beliefs, opinions), and learning (Husič-Mehmedovič, Kukič, **Čičič**, 2012; Kavitha et al., 2023).

Motivation is the driving force of an individual. Based on universal human needs, it leads to the setting of desires and goals, which together form the basis of human activity. Without motivation and corresponding actions, humanity would not survive (Melika Husić-Mehmedović, Slavo Kukić, Muris Čičić, 2012). A motive is a strong need that prompts a person to take certain actions. People constantly have numerous needs, which can be divided into *biological* and *psychological*. Biological needs may include hunger, discomfort, while psychological needs include recognition, belonging to a social group, or the pursuit of respect (Winegard, Boutwell, 2017). A need becomes a strong motive when it reaches a certain level of intensity.

Perception is the process of capturing and interpreting objects and events in the environment, and this process varies depending on the type and complexity of the product (Al Shishani, 2020). Perception is how we see the world around us or how individuals respond to environmental stimuli. The effectiveness of marketing actions, communication with consumers, and overall marketing success depend heavily on how we perceive reality (Husič-Mehmedovič, Kukič, **Čičič**, 2012). This stage involves consumers' familiarity with information, knowledge about a particular product or service, interpretation of that information, and ultimately perception. This entire process is based on personal consumer experience, so even when exposed to the same or similar stimuli, information interpretation and response can differ, based on individual values, desires, and expectations. It is also important to recognize that consumers tend to process information through their senses, focusing on stimuli that most affect their emotional state. Thus, perception determines how a consumer evaluates a product and what priorities they choose.

Learning is the process by which consumers change their behaviour based on new information or experience. It is a crucial factor in shaping consumer behaviour (Al Shishani, 2020). Learning describes changes in behaviour resulting from experience and ongoing interactions with the environment. It is said that most human behaviour is learned through elements such as incentives, stimuli, signals, responses, and reinforcement. In terms of purchasing behaviour, the learning process determines which products will be chosen in the future. On one hand, forming an attitude requires going through a learning process, which depends on many elements and the processing and acquisition of knowledge from environmental features (Husič-Mehmedovič, Kukič, **Čičič**, 2012). On the other hand, through learning, individuals develop their attitudes (beliefs, opinions), which later strongly influence their purchasing behaviour.

Attitude (belief, opinion) expresses an individual's relationship with their environment, objects, phenomena, ideas, problems, etc. (Simanavičienė, Navikaitė-Varanavičienė, 2019). The attitude construct plays a central role in consumer behaviour theories and research. This construct, especially the attitude expectations and value model, offers an alternative to relying solely on revealed preferences (Ajzen, 2018). According to Zikienė and Brazinskaitė (2012), attitude is an individual interpretation that is difficult to change. It is divided into *positive* and *negative* regarding a particular object (Zikienė and Brazinskaitė, 2012; Simanavičienė, Navikaitė-Varanavičienė, 2019; Zikienė, 2010), depending on the feelings experienced by the consumer in response to certain products (services). For example, packaging a small product in a large, prominent package creates the impression that the product is more substantial and valuable, but it can also lead to negative experiences. It has been found that deceptive packaging sizes create negative consumer experiences, forming a negative attitude towards such packaging, which consumers may apply not only to that brand but also to similar food products with comparable packaging (Wilkins, Beckenuyte, Butt, 2016).

Due to increasing product offerings, consumers find it more difficult to choose, requiring more time to make decisions, and sometimes an excess of options leads to irrational choices. Therefore, it is important to understand what

factors shape consumer attitudes and influence their purchase intentions (Clement, Kristensen, Gronhaug, 2012). Attitudes consist of three components: cognitive, behavioural, and emotional. The *cognitive* component provides knowledge and beliefs formed through consumer experience about a particular object; the *behavioural* component describes the intention to act towards the object - consisting of various consumer actions based on beliefs or actions that demonstrate the consumer's intention to buy; while the *emotional* component reflects the positive and negative emotions and reactions experienced by the consumer towards certain product and packaging elements (Zikienė, Brazinskaitė, 2012; Kotler and Keller, 2007; Pikturnienė and Kurtinaitienė, 2010). Influencing one of these components can affect the consumer's attitude and encourage desired behaviour, and changing one component can alter the overall attitude towards the product (Bakanauskas, Jonušytė, 2020).

Thus, consumer behaviour is important as a marketing discipline that studies, investigates, how and why consumers choose certain goods and services, and what factors determine their choices. After conducting relevant consumer behaviour research, producers and retailers can better position their products, target the right audience, and plan advertising campaigns. The process of choosing goods or services itself is complex, and involves both objective and subjective consumer perceptions, influenced by various external factors.

CONSUMER DECISION-MAKING PROCESS

Under the dominance of classical economic theory, the consumer was considered a rational decision-maker. It was believed that this rational consumer could choose from all possible alternatives the one that would provide the greatest benefit for the limited resources they have, as consumers tend to maximize their satisfaction with limited resources. This led to the assumption that the consumer is a smart, rational, thinking, and problem-solving individual who collects and evaluates external information to make an informed decision. Economic theory ignored the social-psychological factors influencing human behaviour, as well as the impact of advertising on consumer choice (Bakanauskas, 2006). Research in the USA revealed a completely different nature of decision-making (Hanna and Wozniak, 2001). Consumer behaviour studies have shown a significant increase in purchases after visiting a single store. After conducting a similar study, it turned out that 75–80% of small goods are purchased in one store. In addition, it was also found that 20–25% of durable goods and clothing are impulsive and hasty, or there is a purchase opportunity that eliminates reflection and pre-purchase planning. It was also indicated that up to 50% of purchases in supermarkets and 33% in various assortment stores are naturally impulsive (Hanna and Wozniak, 2001). This showed that the buyer's choice to buy is not always a rational and thoughtful result. The conducted studies forced a change in the approach to the factors determining consumer decisions, therefore, in 1970–1980, most consumer behaviour studies were directed towards the consumer decision-making process.

The main reason for creating a separate marketing discipline in an attempt to better understand consumers is the need to apply new discoveries in practice. First of all, the development of a market strategy requires a thorough understanding of consumers. When creating and designing any marketing strategy, it is necessary to delve into their preferences, expectations, beliefs, information gathering, and a multitude of other consumer information processes. Finally, the study of consumer behaviour can help consumers discover and understand some elements of their behaviour, which can lead to more efficient consumption and better satisfaction of needs in a more rational way and greater consumer control.

Every day, a person makes many decisions, including the decision to buy and what to buy. Therefore, a consumer decision is a process of certain actions, when a consumer chooses a product that can help solve a problem or satisfy an emerging need, in other words, a purchase is considered a problem-solving activity or an exchange process, during which both the buyer and the seller evaluate the compromises required to satisfy their needs and desires (Urbanskienė, 2000; Bakanauskas, 2006; Jiang et al., 2023). The purchase decision is influenced by various consumption-related behaviours, including psychological, physiological, and other essential activities that motivate consumers to act (Chowdhury, 2019). And the purchase is only the end of a long and complex process called the decision-making process to buy that took place in the buyer's mind. Its duration can take from a few seconds to several months. The decision to buy is a complex process because consumers behave irrationally in certain situations (Vlahna et al., 2021). It is believed that the decision-making process to buy consists of five stages: 1) problem recognition; 2) information search; 3) evaluation of alternatives; 4) purchase decision; 5) post-purchase behaviour (Akhter & Nur-Al-Ahad, 2021; Ali et al., 2022; Qazzafi, 2019; Santos and Goncalves, 2022).

A decision can mean a choice between two or more alternatives, but, despite the abundance of choices, the consumer usually considers a choice from two options, rejecting all others without further consideration. This is a process that requires different levels of involvement from decision-makers. Depending on the level of involvement, three main levels of consumer decision-making are distinguished: limited, extended, and habitual (routine) problem-solving (Husič-Mehmedovič, Kukič, **Čičič**, 2012; Urbanskienė et al., 2000). The latter is quite common in the life of every consumer. The decision-maker, first, can rely on what they already know about the product without looking for any additional

information. Such decisions do not require special reflection, usually in this case, products are bought often and cheap (e.g., bread, shampoo, etc.) and those that are needed here and now (e.g., refilling the car's fuel tank). *Limited problem-solving* is a more complex level of decision-making compared to habitual behaviour. It can be expected in cases where consumers have established criteria for evaluating a product category and brand, but do not have a specific preference for a brand within the group. It is then that consumers need additional information to make a purchase decision, to recognize subtle differences between existing brands (e.g., buying shoes). *Extended problem-solving* is undoubtedly the most complex level of decision-making. The premise of the purchase decision is a wealth of information that needs to be collected in advance to create criteria or narrow down the choice to a small number to be considered. In other words, it is a process where an individual needs a lot of time to decide due to the complexity of the perceived consequences of the decision (Pickton, 2001). Making such decisions involves a high degree of risk, as they are associated with large financial commitments (e.g., buying a house), social risk (e.g., buying a gift), increased risk of personal dissatisfaction (e.g., interior design) (Bakanauskas, 2006). If the decision is irreversible and can have serious consequences, greater accuracy, reduced negative emotions, and easier justification will most likely be the most important. High-risk decision areas are important, new areas of application for our system, as the relevant decisions are characterized not only by the desire to make accurate decisions, but also by cognitive decision difficulties, emotionally charged compromises, and the need for justification.

CONSUMER MOTIVATION

Identifying the reasons for purchasing a product is an important step towards accurately meeting the needs and desires of consumers. A motive is a strong and constant internal **stimulus** that underlies behaviour. Stimuli arise from a person's environment and cause arousal. Physiological and emotional stimuli have been distinguished since ancient times. *Physiological stimuli* – stomach contractions, fluctuations in blood sugar levels, changes in body temperature, the release of sex hormones – can cause arousal. It can also be caused by *emotional stimuli*. And fantasy can stimulate secret needs, as well as the limitation of their freedom of choice causes arousal in individuals. In addition, arousal can be caused by various environmental factors – *smells, advertisements, packaging, billboards and price discounts*. Accordingly, the advertising of products is also oriented, which must perform two functions: to arouse the consumer's desire for a certain product category and to clearly direct the consumer to its purchase (Bakanauskas, 2006).

Motivation is one of the main factors characterizing consumer behaviour. Everything that is done is conditioned by some motives or goals. Motivation is the cause of behaviour. A motive is a construct that represents an imperceptible internal force that stimulates and compels action and gives it a certain direction. A motive is the reason why an individual does something. The concepts of *need* and *motivation* are often used interchangeably. This is because when a consumer feels a gap between the desired state and their current actual state, the need is recognized and experienced as a driving state (Hawkins, Mothersbaugh, 2010). *Need* is the first element in the motivational chain, and therefore a prerequisite for others. In other words, without it, there are no motives or motivation to achieve goals (Husič-Mehmedovič, Kukič, **Čičič**, 2012). Needs and motives determine what consumers perceive as important, as well as their feelings and emotions. For example, a consumer who feels hungry is motivated to satisfy this need, will consider food and advertising about food as personally important, will experience negative emotions before eating, and positive emotions after eating (Hawkins, Mothersbaugh, 2010). Thus, motivation is a state when a person's energy is mobilized and directed towards an external goal; a driving force that encourages an individual to act. The source of this force is a state of tension, because a certain need is not satisfied, and the way to reduce tension is to act and satisfy the need (Husič-Mehmedovič, Kukič, **Čičič**, 2012). And *need* is the main force that motivates a person to act. Needs are usually physiological and acquired. *Physiological needs* are necessary for a person to survive, be healthy, and develop normally. These are the needs for food, drink, shelter, sex and others. *Acquired needs* are learned and conditioned by relationships with other individuals in the environment in which we grew up. These are the needs for prestige, power, status, etc.

Scientists are trying to understand the **motives** that influence human behaviour. Motives are the result of the interaction of psychological and physiological processes in a person, the totality of internal factors that encourage a person to act and direct and control that activity. They are important for consumer behaviour because they enable revealing the external results of these internal processes and to answer the question why the behaviour of people, individuals and groups in the markets takes the form it does (Husič-Mehmedovič, Kukič, **Čičič**, 2012). A motive is an internal state arising from an imbalance in biological or psychological equilibrium. When this balance is disturbed, motives stimulate the individual to restore the previous balance. Based on this concept, specialists work to create states of tension for consumers in order to offer products that would help restore the resulting imbalance, yet the tension created must not be too great. This tactic is popular and used in almost 15 percent of TV commercials. For example, insurance commercials use this tension to stimulate interest in health, life, and home insurance, since insurance reduces the fear of suffering from an accident (Bakanauskas, 2006).

Motives can be divided into *rational* and *emotional*. *Rational* ones are caused through reason and logic. They emphasize objective, practical goals – economy, duration, quality and dependence. Rationality-oriented advertising tries to form a convincing and valuable attitude by providing relevant information without any hints or clever tricks. *Emotional* motives are based on subjective criteria, their origin is a person's feelings, impulsiveness or irrational actions (Bakanauskas, 2006). When we buy under the influence of emotional motives, purchases are more out of whim than out of practical need. According to Holbrook and Hirschamn (1982), emotional consumption is based on fantasy, feelings and the joy of acquisition. Most emotional motives are related to an individual's social and aesthetic needs and self-image, with status in society, motives of belonging, beauty, honour, uniqueness and pleasure (Bakanauskas, 2006; cf. Husič-Mehmedovič, Kukič, Čičič, 2012).

Conscious (open) and *unconscious* (hidden) motives can be distinguished. In most cases, the consumer's motives are conscious and the reasons for the behaviour are clear. If the consumer knows his motives, he does not need to be aroused. Various reasons can lead to unconscious motivation, especially if the needs are so unimportant that he does not even know them. In addition, needs can be suppressed. Since unconscious motives are secret and unknown to the consumer, the consumer must be shown by advertising (Bakanauskas, 2006). Hawkins and Mothersbaugh (2010) accordingly distinguish between manifest and latent motives. Manifest are known and freely recognized motives that correspond to the prevailing value system in society, they are more likely than motives that contradict such values. Motives unknown to the consumer or not recognized by him are called latent motives (Hawkins, Mothersbaugh, 2010).

In addition, motives can *positively* or *negatively* affect people's behaviour. Positive influence leads people to a goal. For example, supplements are used to get the body the required number of vitamins. Negative influence directs people away from unfavourable conditions. For example, a mouthwash is used to avoid bad breath. Although advertising is usually used to create a positive direction of influence, sometimes negative influence, such as fear or guilt, is used to get the desired result (Bakanauskas, 2006).

Motives undoubtedly play an important role as a variable determining consumer behaviour. However, the **goal** is also important in the motivational chain. It is a specific external stimulator that acts as a guide in a person's attempts to satisfy needs, in other words, it is the result of motivated behaviour (Hawkins, Mothersbaugh, 2010). The consumer is motivated by the **need** to be satisfied and achieve goals. The desired result of motivation is the goal. And the individual's choice of goals depends on several factors that define the person or situation at the time the need arises. A person's physical, financial or emotional state determines the choice of goal. Cultural values and norms also determine the choice of goals (Bakanauskas, 2006). Thus, companies adapt to the individual goals of consumers, which are structured and adapted to the dominant cultural norms and values, as well as self-perception.

Consumer behaviour is influenced by **needs**, which affect people according to a certain hierarchy. In this case, many mention Abraham Maslow's theory, who hypothesized that human needs are the main motive for behaviour (1954) and that people's needs are arranged in a clear order. For higher needs to arise, lower ones must be completely satisfied. If the lower needs are not completely satisfied, they dominate human behaviour. In other words, Maslow's hierarchy of needs is a macro-theory designed to explain most human behaviour in general terms. However, the main problem with Maslow's hierarchy is that it cannot be tested empirically – it is impossible to empirically obtain reliable indicators that would show how much one need must be satisfied before another is realized. It would probably be extremely difficult to do this, since each person is individual and the level of satisfaction of each need would also be of different levels. Despite this problem, Maslow's hierarchy of motives is often used in marketing. This is confirmed by two facts. On the one hand, mass consumption products often meet different levels of needs. On the other hand, advertising can emphasize different levels of motives or needs (Hawkins, Mothersbaugh, 2010).

Scientists Hawkins and Mothersbaugh even compiled a certain classification of human needs and their product equivalents. According to them, the basic – physiological – human needs include food, water, sleep and, in part, sex – physiological motives. In marketing, they are satisfied by healthy food products, medicines, sports drinks, low-cholesterol food products and exercise equipment. The physiological needs are followed by safety needs – these are manifestations of physical safety and protection, stability, a familiar environment, etc. safety needs. This group includes smoke detectors, preventive medicines, insurance, pension investments, seat belts, burglar alarms and protective sunscreens, etc. Social needs occupy the middle of Maslow's pyramid. These are the needs of love and emotional connections, attachment and recognition. Products that help to realize them are personal care, food, entertainment, clothing, etc. Needs for respect and self-esteem – status, advantage, self-esteem and prestige – are related to a person's feelings of usefulness and achievement. Clothing, furniture, alcoholic beverages, hobbies, shops, cars, etc. are associated with them. And the last need is self-realization. It includes the desire to realize oneself, to become everything that a person can be. This part of the pyramid includes education, hobbies, sports, some vacations, gourmet food, museums (Hawkins, Mothersbaugh, 2010). This confirms that it is not in vain that Maslow's theory is often considered the basis for market segmentation and product placement. However, it is important to remember that any consumption behaviour can satisfy more than one need. Also, the same consumption behaviour can satisfy different needs at different times.

In addition to Maslow's famous theory and classification of needs, in the scientific literature one can find other scientists' theories of human needs and their corresponding classifications. One of them is the classification system created by McGuire, in which various theories are divided into 16 categories. This system helps marketing specialists to identify motives that may be related to various consumption situations. McGuire first divided the motives into cognitive and affective, into those oriented towards maintaining the status quo or towards growth, according to the source and purpose of the motive and internal and new external relationships with the environment. Cognitive motives are oriented towards a person's need to adaptively orient themselves in the environment and seek a sense of meaning (Hawkins, Mothersbaugh, 2010).

To explain consumer behaviour, McClelland's theory of acquired needs is often used, which is based on the hypothesis that three types of acquired needs are important for human motivation:

- The need to achieve something, characteristic of people who want to be successful and take responsibility for solving problems.
- The need to belong is characteristic of people who are more oriented towards communication than success.
- The need to control or acquire and consolidate control over others can be expressed in two forms: positive, which results in persuasive and inspiring power, and negative, which leads to the desire to dominate and subjugate others.

Modern theories have appeared recently. One of them states that all motives can be divided into two groups: *social* and *non-social*. Social motives are characterized by an orientation towards other people. Their satisfaction, or rather, means that products or services have been approved by the group in some way. Such approval, for example, is characteristic of youth fashion and sports goods, adult clothing, the choice of drinks or restaurants, etc. Non-social motives, related to needs that are satisfied regardless of any external influence, in isolation. The needs to sleep, hear the news, etc. are a classic example of such needs.

The second approach to the classification of motives distinguishes three main groups of motives: functional, symbolic and hedonistic. The first, functional motives, are based on the search for products that could make a person or household functional. The motive to buy a larger car is the need for a larger trunk, the motive to buy a washing machine is related to the desire to save time, etc. In the context of symbolic motives, self-esteem, belonging, status, etc., there is always a need to achieve something. Finally, hedonistic motives are determined by the feeling of satisfaction now of satisfying the need. For example, the motives to play, learn or rest are marked by this feeling. However, from a marketing point of view, this fact is not the most relevant, but the fact that these types of motives influence the purchase and consumption of certain products and services (Hawkins, Mothersbaugh, 2010).

Consumer behaviour reflects their actions, manifested in the search, purchase, use, evaluation and rejection of goods and services with which they hope to satisfy their needs. This means that consumers, when making a purchase decision, seek to make the best use of their resources, such as time, money and opportunities. When choosing to buy products, consumers are influenced by different motives, so each product or brand requires a different marketing and advertising strategy. Consumers do not buy products; they buy the satisfaction of motives or solutions to problems. So, they don't buy perfume, but romance, sexual appeal, sensual pleasure, sophistication, etc. Therefore, marketing specialists must discover the motives that their products and brands can satisfy and create marketing combinations based on these motives. However, marketing specialists rarely, or perhaps never, create a need, because motives are essentially determined by human genetics and experience. But they create demand – the desire to buy a particular product or service. It is caused by a need or motive, but demand is not a motive. For example, an advertisement for mouthwash may use the motive, suggesting that without mouthwash, people don't like you because your breath smells bad. This message links mouthwash to an existing need for affiliation, hoping to create brand demand. (Hawkins, Mothersbaugh, 2010). Such information is important for creating marketing strategies, and consumer behaviour research provides important data for such strategies. Based on what consumers buy, why, when and how often they buy, as well as how often they use the purchased product or service, the marketing plans and advertising campaigns of a certain product can be directed.

ADVERTISING COMMUNICATION AND CONSUMER BEHAVIOUR

Marketing Communication

One of the main reasons for analyzing consumer behaviour is to create an appropriate communication mix that reaches the target audience. In recent times, it is not enough just to create a quality product. Today's market peculiarities require not only setting an attractive price, organizing a suitable presentation method, and creating favourable service conditions, but also communicating with existing and potential consumers. Even the best product (brand) is worthless if consumers do not know about its existence, place of sale, price, features, etc. Therefore, marketing communication is

needed, which tells or shows consumers where, how, when, and why the product is used and for which consumers it is intended. Thus, *communication is part of marketing activities*, providing the consumer with information about a product or service. It is like the voice of the brand - one of the ways to establish a dialogue with consumers and maintain relationships with them (Bakanauskas, 2012). When communicating, the consumer is not only persuaded, informed, reminded, and influenced in their behaviour, but also brand loyalty is created (Madden, Perry, 2003).

Marketing communication is variously defined by different scientists. It is argued that it is a certain strategy (Zaušková et. al., 2015), that it must meet consumer expectations and needs to receive positive feedback from consumers (Hänninen and Karjaluoto, 2017; Zephaniah et. al., 2020), that it is carried out through various information tools or direct marketing tools, which encourage the purchase of specific products or services (Zephaniah et. al., 2020). *Marketing communication* is a process during which the target audience is reached, transmitting targeted information to it through selected communication channels at the right time. This process helps to create consumer awareness of the product or brand, inform about new products, and stimulate sales (Melovic et al., 2020). Prikhodko et al. (2019) claim that marketing communication can now be called the most effective marketing tool, including the practice of transmitting information necessary for the company to create a positive market image to actively generate demand for the offered products. Gomes and Knowles (2006) emphasize that it is not enough just to transmit information - you need to know what, how, to whom, and how many times to say. This is finding ways to influence the consumer's purchasing process and create needs (Clow, Baack, 2018). Pickton and Broderick (2011), Jasiukonytė and Tamulienė (2023) define *marketing communications* as the *totality* of all marketing communication elements, which helps the organization to communicate with its target audience in all possible ways. This is how the concept of *integrated marketing communications* arises. In modern society, it is necessary not only to attract customers through various marketing communication methods, but also to connect them with each other to achieve the best results. The focus is on the consumer and building relationships with them (Jasiukonytė and Tamulienė, 2023), without rejecting the factor of survival in today's difficult competition (Widjaja, 2022). In turn, integrated marketing communications are described as the organization's marketing communication, in which all elements are combined into a single and *coordinated* whole (information), which is conveyed to the target consumer. They include **advertising** and other marketing communication methods used by business and non-business organizations to change the behaviour of the target audience (consumers) (Bakanauskas, 2012; Melovic et al., 2020).

Marketing communication is the transmission of a sender's message to a recipient through selected media channels. Distribution channels, mass, selective, or exclusive, create an image of the product's availability to everyone or only to a selected market group. In addition to traditional message transmission channels, social media has become extremely popular. It is a very interactive platform that allows individuals and communities to share their content and present advertising (Felix et al., 2016; Moslehpour et al., 2018), and social networking sites (*Facebook, TikTok, Instagram, Twitter*) are a great way to create and develop your brand image (Marešova et al., 2020). Social networks have a huge influence at every stage of the consumer decision-making process to form a general opinion and attitude. In addition, social networks have opened the opportunity to communicate with their consumers here and now (Prabowo, et al., 2019; Wibowo et al., 2020). Considering the establishment of new media channels in the market, modern research empirically studies specific goals of social media marketing: promoting sales, increasing brand awareness, improving the product image, generating traffic on online platforms, reducing marketing costs, and activating user interactivity on platforms, encouraging consumers to publish or share content (Ashley and Tuten, 2015; Bianchi and Andrews, 2015; Schultz and Peltier, 2013).

Social media can help consumers evaluate and recognize various products, brands, and services, and provide companies with various opportunities to use technology to attract an audience more efficiently and effectively. Social media has become a very effective platform for communicating with consumers. Through social media, brands can send more personal and direct messages to consumers and receive feedback in real-time (Syaputra, Azhar, 2025). By using social media platforms, consumers can get user experiences, product reviews, and expert opinions from other consumers, thus forming their perception and knowledge of the product. Consumer interaction and exchange of opinions on social media can influence consumer purchasing decisions. Commenting and sharing can shape consumers' social identity, i.e., connect and identify with a specific social group (Mu, 2022). When consumers see that the people in their social circle positively evaluate a product, they are more likely to buy it. Advertising, recommendations, and carefully planned marketing activities on social networks can stimulate consumer needs and desires, arouse their interest in specific products or brands, and thus encourage purchasing behaviour (Mu, 2023). Anwar and Iskandar (2020) revealed that consumer interaction with brands through social media can strengthen their relationship, which in turn increases the level of engagement. One of the factors that can encourage engagement is the success of delivering relevant advertising messages, arousing emotions, and personally satisfying consumer needs and desires. It has also been found that personalized advertising can strengthen consumers' emotional attachment to brands (Hidayat, 2020; Lestari, 2018). The importance of social media in creating consumer engagement is shown by a study that found that platforms such as Instagram, Facebook

and Twitter allow brands to use consumer data to create more personal and relevant advertisements. This increases consumer engagement because they believe that the advertisements presented are more in line with their interests and needs (Schouten et al., 2020). This study confirms that social media acts not only as a communication channel, but also as a platform supporting the personalization process in marketing. Accordingly, social media platforms show relevant products and services to users, considering their needs and interests, collecting consumer data, and providing personalized recommendations, thus influencing their purchase intentions. And when personalized advertising meets the needs and preferences of consumers, they feel more valued, which increases emotional attachment to the brand (Syaputra, Azhar, 2025; Keller, 2020). Adjusting advertising messages based on consumer behaviour data, such as previous search history or preferences, makes the advertising more attractive and increases consumer interaction, such as comments, likes, and content sharing (Smith and Johnson, 2021; Kim, 2022; Zhao and Wang, 2019). Personalized advertising increases the sense of relevance, which in turn encourages greater engagement compared to general advertising. Thus, social network marketing has a positive impact on consumer purchase intentions, and consumer behaviour and attitudes on social media influence their purchase decisions. Social network marketing can stimulate consumer interest and desire to buy by increasing brand awareness (Mu, 2023). However, despite the potential of personalized advertising, challenges remain, especially related to the management of consumer personal data. The use of data to create personalized advertisements often raises concerns about privacy and data security. Some consumers feel uncomfortable with the data collection used to provide overly personalized advertisements, which in turn can damage their trust in brands and reduce engagement (Keller, 2020). Therefore, companies must be very careful when implementing personalized advertising, ensuring transparency in data use and giving consumers the opportunity to control the type of data collected and used in advertising (Syaputra, Azhar, 2025).

The obvious change in marketing communication reveals how constantly changing this area is and how it is necessary to re-evaluate, it would seem, already known factors, circumstances, which are related to consumer behaviour. The emerging new marketing communication channels force not only the nature of communication or its strategies to change, but also to re-recognize the consumer and their changing behaviour, which determines the changes in social communication.

The Concept of Advertising

One of the situational factors that can encourage the intention to purchase a new product is advertising (Basuroy et al., 2006). In fact, advertising, both traditional and online, is one of the most powerful tools to help overcome consumers' challenges in the intention to buy new products (Burmester et al., 2015; Gruner et al., 2019). Under active market conditions, where the production of goods and the provision of services increase much faster than the purchasing power of the population, advertising becomes one of the most important factors in attracting as many customers as possible, shaping their needs, and thus ensuring their loyalty. At the same time, **advertising** becomes one of the most effective means of competition against competing companies that offer similar services and pursue similar goals. It is related to shaping public opinion. Advertising can be defined as a short, emotionally coloured message aimed at potential buyers to encourage them to perform various actions related to the acquisition of goods or services. It is called a form of visual art, a form of social activity, a way of informing groups of real people (Jokubauskas, 2003). It is also referred to as a part of information or specific information (**Čereška**, 2004). Different aspects are emphasized depending on which scientific field provides the definition of the concept. It is evident that when examining the concept of advertising, it is noticeable that it intertwines aspects of marketing, communication, economics, sociology, psychology, and aesthetics, including human psychology, sociology, and social psychology (see Table 2).

Table 2. Definitions of Advertising

Kotler (1990)	Advertising is non-personal communication carried out through paid information channels, with a clearly specified source of funding.
Kotler and Keller (2007)	Advertising is the dissemination of paid, non-personal information about ideas, goods, or services to a selected audience.
Rosengren and Dahlen (2015)	Advertising is a non-personal, paid communication tool designed to shape and persuade consumers to purchase certain services or goods and is presented to consumers in certain ways.
Jonikas, 2013	Advertising is a certain form of communication aimed not only at conveying information but also at influencing the consumer, encouraging them to purchase a product or service, and eliciting the desired emotional reaction.
Rupšlaukis et al. (2019)	Advertising is information about products, their features, and forms of realization, as well as about organizations that produce or sell these goods and services.

Solomon et al. (2011)	Advertising is non-personal communication from a designated sender aimed at *informing*, *persuading*, and/or *reminding*.
Durmaz (2011)	Advertising is a persuasive message intended to inform the target audience about its products, services, or ideas.
Picktonas and Broderick (2011)	Advertising is the art of preparing the right message and presenting it correctly to the target audience.
Terkan (2014)	Advertising is a form of communicative activity. It is informational and persuasive in nature, capable of influencing consumers to buy goods or use services through new media channels.
Winston (2010)	Advertising is a non-personal communication tool about goods, services, ideas, organizations, people, and places, delivered through advertising carriers.
Vorobėjus (2004)	Advertising is a targeted use of information channels involving activities that enable informing residents about an organization, its offered goods, services, or ideas, through verbal or visual means, and encouraging purchase or consumption.
Čereška (2004)	Advertising is impersonal, paid, persuasive information disseminated through various means by a known advertiser about goods, services, or ideas to sell them.
Arenso et al. (2008)	Advertising is a non-personal transmission of information from identifiable advertisers, usually paid, often with the aim of persuading about products, services, or ideas through various media.
Smetonienė (2009)	Advertising is a communication tool aimed not only at transmitting desired information but also at influencing consumers, eliciting a probable emotional response.
Wellsas et al. (2006)	Advertising is paid communication from a specific identifiable client via mass media aimed at persuading or influencing the audience.
Percy (2008)	Advertising shapes consumer opinion or attitude towards a product or brand. The advertised product is often given an emotional tone that influences consumer behaviour in a way beneficial to the company.
Diržytė et al. (2012)	Advertising is any form of paid, impersonal message disseminated through mass communication channels, primarily aimed at informing people or influencing their choice of ideas, goods, or services.
Išoraitė (2013)	Advertising can disseminate information about a product or service, create and maintain a favourable image, shape the need for a product or service, promote loyalty to the product or service, and directly stimulate purchase (discounts, coupons, gifts).
Littlejohn and Foss (2011)	Advertising is a form of marketing communication used to encourage, persuade, or manipulate the audience (viewers, readers, or listeners, sometimes a specific group) to take or continue certain actions.

In marketing literature, the concept of advertising is explained differently, emphasizing certain features of advertising – its purpose, form of influence on consumers, characteristics, etc. The definitions of advertising presented are quite similar, highlighting that advertising is a form of communication, often mentioning compensation for advertising, clear advertisers of the promotional message. According to most authors, one of the main features of advertising is that it is impersonal. However, over time, new definitions should emerge that represent the currently widespread personalized advertising, which is clearly reflected in changes in marketing communication. Therefore, besides being often described as a tool for persuasion, suggestion, and information (Bakanauskas, 2012), its concept should also be expanded to include personalized advertising, a trend that has become increasingly prominent and a vital part of advertising in recent years. It is also important to remember that any form of advertising aims to sway or influence the consumer to decide or perform a certain action (Čereška, 2004). Therefore, the advertised product is often given an emotional tone that influences consumer behaviour in a way beneficial to the trader.

Advertising can be *rational* and *emotional*. In the first case, advertising informs, influences consciousness, argues, and seeks to persuade. *Rational advertising* uses texts, drawings, photos, and other information. Its style is often strict, constructive, convincing, prompting the buyer to decide quickly and purchase. *Emotional advertising* hints, advises, appeals to feelings, and subconscious motives. Its impact is associated with ideas, images, and specific environmental situations. Therefore, the main tools of such advertising are visuals and partly sounds. Its tone is playful, soft, and enticing. Various symbols are used to evoke feelings in buyers, creating emotional arousal.

Rational attractiveness refers to essential information about the advertised products. Such information is always relevant, for example, what materials or ingredients are used to create the products, or the benefits consumers could

gain from purchasing and using the products (Li and Cui, 2021). Rational attractiveness usually includes product specifications, features, and any information primarily aimed at creating an effective impression from the consumer's perspective (Dolan et al., 2019; Trivedi et al., 2019). The information presented about the advertised product is highly valuable for the advertising itself and is highly appreciated by consumers who want to assess their needs if they decide to purchase it (Zimand Sheiner et al., 2021). Previous studies have shown that advertisements with high rational appeal are very likely to positively influence consumer reactions towards the product, especially in the context of live broadcasts (Ma et al., 2023). Rational attractiveness is effective in increasing consumers' purchase attitudes and intentions and influences purchase intent (Chan, 2025).

Emotional attractiveness is an appealing factor in advertising that connects the product emotionally with consumers to persuade them to buy the products (Wan Nawawi et al., 2022). It stimulates consumer emotions that subjectively align with their beliefs about the brand (Gahlot Sarkar et al., 2019). Advertisers often incorporate emotional appeal into their ads, trying to stimulate and evoke emotional reactions by presenting convincing messages about their products or brands. This persuasive act is usually implemented using verbal or non-verbal cues to maintain sufficient emotional responses (Gahlot Sarkar et al., 2019). It has been proven that emotional appeal as a stimulus has an indirect effect on consumers' purchase intentions. Various music, emotions, and stories in advertisements are effective in improving purchase intentions (Chan, 2025).

Thus, the purpose of advertising is both to inform consumers and to motivate them emotionally. In fact, these two factors usually go hand in hand, because when advertising products, it is important to both provide information about the product and evoke certain emotions, emotional impact, and a connection with the advertised product so that purchasing it also involves experiencing a certain feeling. Emotions and feelings are most often evoked using human senses, through which they are activated. Since people understand the world and their environment through senses, they can better evaluate and perceive the value and feeling of the advertised product, which will be awakened and recognized through their senses.

Advertising and Sensation

Motivation is an important element in evaluating consumer behaviour and the choice to buy a particular product or service. However, besides motivation, there are other human mental processes that influence the purchase. But these processes are more related to the influence of advertising on the consumer, as the knowledge of human mental processes creates the conditions for creating psychologically and commercially more effective advertising (**Čereška**, 2004). And this, in turn, stimulates certain consumer mental processes and awakens motives to purchase the advertised product or service. One of the main such processes is *sensations* and *emotions*.

A ***sensation*** is a primary cognitive process. It is one of the most important elements of cognitive influence on the consumer. They allow a person to recognize only the individual properties of an object, which directly affect the sensory organs. A person distinguishes sounds, colours, taste, smells, etc., in other words, visual, auditory, olfactory, taste, tactile, movement, organic, vibrational, balance, and other sensations are distinguished (Jokubauskas, 2003). It is important to remember that sensations are closely related to other mental processes – perception, emotions, memory. This is especially relevant when preparing advertisements, because if the advertised product can evoke positive or previously experienced pleasant emotions and could affect it through sensory sensations, in this case, all the information received would be easier to absorb and identify, thus arranging that information into appropriate categories. Lindstrom (2008) identified all this as an emotional sales proposition, when products are perceived as different primarily due to emotional attachment. The use of sensory marketing in various business sectors only confirms its relevance, when all five human senses can be used in marketing strategies and tactics (Kumar, 2014).

Since 2010, and perhaps today, sensory marketing has received the greatest interest from both a scientific and non-scientific point of view as one of the most effective strategies (Krishna and Schwarz, 2014). This tactic involves human senses to establish deeper emotional connections between brands, products, and consumers, ensuring that the interaction between the product/brand and the consumer is an increasingly unique and memorable experience (Krishna, 2011; Hulten, 2011). Thus, the sensory system is so important in advertising that a separate area of marketing is even distinguished - sensory marketing, which focuses on the consumer's senses (Krishna and Schwarz, 2014). Sensory marketing involves human senses to establish deeper emotional connections between brands, products, and consumers, ensuring that the interaction between the product/brand and the consumer is an increasingly unique and memorable experience (Krishna, 2011; Hulten, 2011). The beginnings of this type of marketing are recorded from ancient times, when people used various smells or eye-catching signs in the markets. Studies only began in the 1950s - after noticing that images are extremely significant in advertising, the power of colours and design elements were investigated (Vahid, Esmaeli, 2012). Over time, sound inserts and musical tracks began to be used in both stores and advertisements. In the 1960s, the sense of smell was considered the newest in the sensory system.

In other words, it has been noticed since ancient times that human behaviour can be manipulated by using sensory marketing. The consumer's decision can be influenced not by one sensory factor, but by the activity of the brain, which is responsible for human decision-making, and is affected by certain methods (Ramanathan, 2017). Through human senses, information is transmitted to the brain, and this affects the reflexes of the consumer's physical body and mind, causing a certain sensory experience (Hulten, 2017). In other words, the perception of sensations occurs when the processed information causes psychological phenomena (Yim, 2018) because not only the positioned product affects the consumer's consciousness, but also the psychological sensations arising from the subconscious, which have a strong influence on the decision to buy (Petit, 2019). Therefore, sensory marketing, according to Bočkova et al. (2021), is defined as a system of stimuli that determines a person's tendency to consume.

Despite the fact that, sensations cannot be transmitted through advertising dissemination tools, nevertheless, in plots and photos we most often see people who feel the pleasure of those changes. Analogously, consumers feel it by identifying with the characters in the advertisement. And if the advertisement makes the buyer look at the product, listen about its usability and other properties, taste it, touch it, then sensibilization takes place, the senses sharpen (**Čereška**, 2004).

Vision. Vision is a sensation that determines the first impression (Singh et al., 2020). A person receives the largest amount of information through vision (80-90 percent) (Jokubauskas, 2003; Berčik, 2016). Sight is considered the most powerful human sense, helping to notice changes, differences in the environment, or positioned products both in physical stores and in various types of advertisements. Visual information is best suited for transmission to a person, because people use the least energy to perceive the image. Advertising tools must attract attention unconsciously. At least one of the elements of advertising tools must be intended for that trick - a bright colour, an unusual shape or size of the first letter, the composition of the text, etc. (Jokubauskas, 2003). Sight is the most developed human sense (Ifeanyichukwu, 2018; Kumar, 2014; Hecht, 2009) and is very important because people store the images they see in their subconscious (Liu, 2019; Longley, 2019), which determine their sensory experience and are reproduced when certain associations arise. Therefore, the products seen in advertisements are unconsciously chosen when they come to the point of sale, although these consumers often deny that they watch advertisements and that they influence them.

Retailers have well analysed the importance and significance of the sense of sight, and successfully manipulate it by positioning products on shelves, choosing the lighting of shop windows, etc., and advertising specialists pay a lot of attention to the aspects of colours, fonts, shapes, compositions and other visual tools in advertisements. A person first sees images in advertisements, then reads the headlines, and only if the first two elements work and attract attention, then there is further interest in the product or service. With the emergence of many advertising transmission channels in the online space, the importance of visuals in them has only become more important. Visual images (stimuli) presented in the online environment should be considered the strongest and most effective, capable of influencing the consumer's perception and experience; as such it is necessary to use distinctive elements in the digital environment, such as logo, pictures, and videos related to the product so that the consumer processes the information provided under the influence of positive emotions, which strengthens the ability to better imagine the use of the product and eventually lead to a positive experience (Kaushik and Gokhale, 2021). The choice of colours is especially important, as it has been noticed that the colours used in the online environment affect the consumer's mood, and this also determines behaviour (Soars, 2009). The correct position of the product in a visual advertisement has an impact on the consumer's intention to buy (Elder and Krishna, 2012). And properly visually conveyed advertising offers affect the consumer's subconscious by encoding a positive impression and encourage the purchase of the product, while unattractive adverts lead to a negative attitude, when consumers unconsciously start criticizing the advertised product (Henderson et al., 2003).

Hearing. The sense of hearing is important for receiving and understanding auditory information. Various sounds attract attention; music evokes certain emotions - this is how advertisers try to captivate the consumer and listen to the advertising content of the product or service. Hearing, like sight, is a sense, the sounds and melody of which travel to the human subconscious and are reproduced when certain associations with a similar sound or melody arise. Hearing and the sounds and melodies heard through it provide information to a person, and are closely related to experiences (Wiklik, 2019), evoke sensations and emotions (Cuesta, 2018), memories (Jillson, 2014) and accordingly affect consumer behaviour (Mukherjee, 2007; Shifriss, 2019). Therefore, popular melodies that people have heard, are familiar, and most often evoke certain associations with certain feelings or life events are usually used. The musical background chosen in advertisements depends on the idea of the advertising message and the advertised product and the desired consumer reaction - a calm, slow melody can allow the consumer to relax and make decisions, a fast, resonant melody can evoke emotions, feelings, encourage the memorability of the product, etc. Although the sense of hearing is important in order to use in advertisements, it has been found that the sound marketing strategy affects only 11 percent of the consumer population (Berčik, 2016). Yet other studies reveal that consumers unconsciously react and make decisions under the influence of the musical background, melody or sound, so in surveys they most often indicate that the sound environment in advertisements does not affect them. However, other studies reveal that, in one way or another, musical sounds can have an impact on consumer

behaviour, which is stimulated by activating their emotions and moods (Cameron & Caza, 2004; Hulten et al., 2008).

Smell. Smells emotionally affect people by more than 75 percent, compared to other human senses (Kumar, 2014; Selwyn and Meakings, 2015). Although it is believed that smell evokes stronger memories and associations compared to the feelings evoked by hearing and sight, the process itself is similar - the smell reminds of certain events with which it is associated, in other words, the information related to it is also stored in the human subconscious and remembered when a certain stimulus appears. The human sense of smell directly affects the limbic system, which is responsible for emotions and memory, therefore, a smell, due to its intensity or aroma, can cause corresponding sensations. An appropriately chosen smell and aroma can activate positive consumer emotions, which can affect behaviour. People cannot block smells like other senses, so advertising and marketing specialists have long understood the benefits of this sense. Special individual perfumes are used for certain brands of cars, the smell of baked goods is emitted in shopping centres, in certain specialized stores, etc. Since the information received through smells remains in people's memory for a long time, the memories received with them can be reproduced even after a long time and cause corresponding associations.

Advertising and Affect

Emotions, feelings, and moods are attributed by some scientists to the general term *affect*. Based on the latest scientific discussions, the term affect is used to describe the internal state of feelings. As Russell and Carroll (1999) state: affect means real subjective *feelings* and *moods*. The theory of affect as information emphasizes the importance of emotions and affective states in making decisions (Schwarz 2012). It defines affect as a broad term that includes affective states such as emotions, moods, and physical experiences (Zanger, Meisner and Rauschnabel 2022). Thus, affect is an essential source of information for evaluation, and emotional expressions encourage the processes of drawing conclusions (Kapoor, 2025). Most consumer affect studies are associated with moods (Barone, Miniard and Romeo, 2000; Cohen and Andrade, 2004), although there is increasing interest in the study of specific emotions (e.g., Lerner, Small and Loewenstein, 2004; Raghunathan, Pham and Corfman, 2006). Moods are generally considered low-intensity and diffuse affective states that generally lack source identification. Moods have been shown to be easy to manipulate by exposure to emotionally charged stimuli such as music, videos, and images, or by recalling an emotionally engaging experience (Cohen and Andrade, 2004; Cohen, 2088). And emotions are much more differentiated and therefore provide more information related to attitude and behaviour (Cohen, 2006).

Emotions perform signalling, regulatory, and stimulating functions. Feelings are human experiences. They describe the consumer's attitude towards the needs, the satisfaction of which causes positive or negative emotions. They are closely related to each other and condition each other. By choosing an emotional appeal, the advertisement can evoke certain feelings in the consumer, and the feelings evoked form the attitude that has formed or create a new one towards a certain object (Bakanauskas, Jonušytė, 2020). Scientists have noticed since ancient times (Gilson, Berkman, 1987; Ambekar, 2009; Dens, Pelsmacker, 2010; Tedeschi et al., 2017; Manideep et al. 2020; Zheng, 2020) that advertisements that appeal to feelings are more effective, attract consumers' attention and remain in memory. Emotion-evoking and exciting images are used in advertisements, facilitating the transmission of certain information, and even the memorization of the advertisements themselves (Ruseckaitė and Bulotaitė, 2017). According to Sadeghi et al. (2015), emotions are the main element that influences human planning and decision-making.

In the scientific literature, emotions are most often grouped based on Robert Plutchik's wheel of emotions (Warpechowski, Orzeszek and Nielek, 2019). However, different scientists distinguish a different number of basic emotions. Some distinguish eight primary emotions: *fear, anticipation, anger, sadness, disgust, surprise, joy, and trust*, from which positive emotions (joy, trust, anticipation, and surprise) create a positive effect, and negative emotions (fear, anger, sadness, and disgust) - a negative effect (Bakanauskas, Jonušytė, 2020). Izard (1992) identified ten innate emotions that a person feels from birth: *joy, wonder, sadness, contempt, shame, fear, disgust, interest, guilt, anger, and excitement*. It is said that they are innate and evoke unique feelings that most strongly motivate a person to take action. Ellsworth and Scherer (2003) identified six basic emotions, which they also call social emotions, as they arise in certain social situations: *happiness, fear, sadness, anger, surprise (shock), and disgust*. However, it is noticeable that some emotions are repeated in all the classifications presented.

In marketing, ***emotion*** can be defined as a reaction to the environment, a state of impulse that precedes action (Husič-Mehmedovič, Kukič, Čičič, 2012). Our behaviour is largely influenced by emotions - love, fear, anger, envy, loneliness, and pity. Emotions describe an individual's response to a specific stimulus in the environment, while mood causes a temporary state of feeling or way of thinking. Sellers often try to create a good mood for buyers, e.g., perfume stores are perfumed to create the appropriate mood (Bakanauskas, 2006). In current science, the functions of emotions, considered as a cause, consequence, intermediary, and moderator (Bagozzi et al., 1999), influence the evaluation and behaviour of all participants in the marketing ecosystem. Emotional convergence (Zablah et al., 2017) and technologies such as artificial intelligence seek to resonate with human emotions (Belk, 2022) and further increase the need for emotional understanding in the market.

Emotions, whether random or integral, arise from a variety of cognitive, physiological, and subjective experiences that are associated with the assessment of importance and resources, ultimately leading to regulatory or evaluative behaviour (Aeron and Rahman, 2025). Therefore, most products offer emotions as a benefit received: cars provide the opportunity to travel and prestige, drinks - to quench thirst and enjoy. Emotions are often used in the advertising of food, cosmetics, fashionable clothes, underwear, and non-alcoholic beverages (Bakanauskas, 2006). The emphasis is not on collecting information before the purchase, but on feelings or emotions: joy, fear, love, hope, 'magic'. More precisely, instead of looking for information to make the best decision, the logic is to follow the matrix: 'first', 'you deserve it', etc. For example, clothes are brought from famous brands not because they look better, but because of an implied better feeling due to the brand's status (Husič-Mehmedovič, Kukič, **Čičič**, 2012).

So, everything that surrounds a person causes certain emotions. It is emotions that lead to the many emotional differences between potential consumers. Any advertising announcement is not only information, but also a certain number of emotions personally experienced by a person during the viewing time (Jokubauskas, 2003). The study of consumers' emotions or their emotional reaction to a product, service, idea or their advertisement constitutes the largest part of advertising research. It is believed that in order to achieve the meaningful psychological effect of advertising, it is necessary for it to evoke positive emotions in consumers. But there is also the opposite - a striking commercial effect of advertising is achieved, although it awakens unpleasant, annoying emotions, fear or anger (**Čereška**, 2004; Bakanauskas, Jonušytė, 2020).

Emotions used in advertisements are transmitted through appropriate *emotional appeals*. As Gilson and Berkman (1987) stated, emotional advertising appeals are creative advertising solutions that aim to stimulate consumers' motivation to buy and shape their attitude towards the advertised product or service. Kanuk et al. (2007) note that emotional advertising appeals are used to influence consumers emotionally, and thus more effectively attract consumers' attention, form an opinion about the product or service. An emotional appeal usually shows some event or life situation, thus creating a psychological attraction to the advertised product (Rizwan et al., 2013). For example, according to Pandos et al. (2013), emotional appeals are most often used in advertisements for personal care products (perfumes, fashion industry, wine, status products), because it is in these product categories that it is difficult for the consumer to rationally justify the advantages of the product. Emotional appeals are used to consciously activate human emotions, trying to appeal to the human subconscious, to values, beliefs, attitudes. For example, if the culture of a healthy lifestyle is prevalent in society, emotional appeals will appeal to the fear of living unhealthily, therefore, various ecological products, vegan products, sports clubs, etc. will be advertised, which should help to live healthily. Thus, emotional advertising appeals are used to provoke an emotional response, a faster consumer reaction, as a result of which they would give a response - take action (Čereška, 2004). Emotional appeals try to give the product special emotional associations that are not directly related to opinions about the benefits of the product. Most consumption decisions are made to experience positive emotions or to evoke them in others (Cavanaugh, Fredrickson, 2010). In contrast to the appeals discussed, rational appeals are also distinguished, based on the premise that consumers base their decision on logic or practical benefits (Pandos et al., 2013). Often, rational appeals show the rationality of the choice, highlighting the advantage of the product over competitors – the consumer is helped to understand what to buy and what not to buy (Rizwan et al., 2013). According to Pandos et al. (2013), the focus of rational appeals is the consumer's problem, and the benefits and properties of the product are presented to solve the problem and get the desired result. Rational appeals appeal to the audience's interests by showing that the product will bring benefits with its quality, economy, convenience, and function, i.e. objectively and logically testifies that the product can provide the desired benefits. The message provides information, for example, about the practicality, quality, performance, or economy of the item (Bakanauskas, 2012). According to Keshari and Jain (2014), rational appeals most often provide various facts and information about the product and its use, and they are also used when it is desired to change consumers' attitudes towards the brand. Which type of appeals to use when creating an advertisement for a particular product or service depends on the message sent by the advertising message to the consumer: whether it is desired to emphasize the benefits of the advertised product (service), the important properties of the product, to inform about the appearance of a new product, or whether it is desired to appeal to the emotional pleasure provided by the product (service), focusing more on the feelings that the consumer will experience after purchasing the product or service, the associations with the corresponding emotional experience. The intensity of the arousal of emotional experience increases people's direct and long-term memory of this experience, therefore, *emotional memory* is very important, which works according to the principle 'pleasant-unpleasant', 'liked-disliked' (Cohen et al., 2006). The impact of emotional memory on making a decision is much stronger than other types of memory, so many people consider the purchase as a way to experience pleasure, to feel better (Jokubauskas, 2003).

Social media now has a huge impact on the process of making consumer purchasing decisions. The term *emotional contagion* is also distinguished in the scientific literature. It includes the imitation of the *influencer's* emotional expressions and emotional reactions, as well as the social evaluation of the influencer's emotions as a reference point for the viewers'

emotional experience and interpersonal behaviour (Clément and Dukes, 2017). For example, the influencer's passion and excitement, demonstrated in his social media content, can cause the contagion of the emotions shown, which can further encourage engagement (Lee and Theokary 2021). A happy face of the influencer can evoke pleasant feelings in the viewer, which can lead to a favourable attitude towards the brand, greater engagement, and stronger purchase intentions (Sánchez-Fernández and Jiménez-Castillo, 2021). This shows that consumers are very susceptible to the emotions of their favourite people and, on the principle of a mirror, accept the emotions conveyed by influencers, as if they are infected by them. The positive excitement of influencers influences the viewers' reactions to social media posts (Lee and Theokary, 2021) and positive intentions, which are transmitted through emotional contagion (Sánchez-Fernández and Jiménez-Castillo, 2021). In addition, emotional contagion also has real principles of benefit for merchants - studies have shown that emotional contagion promotes positive results, e.g., increased customer engagement and purchase intentions (Shuqair et al., 2024). Thus, emotional contagion is significant in determining consumer behaviour. In the scientific literature, it is also possible to find the term *approval* related to emotional contagion. It is associated with the use of celebrities as an advertising attraction object to encourage and motivate consumer purchasing behaviour (Wan Nawawi et al., 2022). This is closely related to emotional contagion, because in both cases, consumers seek to identify with the people advertising the product (service), unconditionally believe the information they spread, and, most likely, think that by purchasing the product or service, they will get closer to them in terms of their status, image, and circumstances of life. Therefore, the use of approval is intended to direct the attention of consumers, especially celebrity followers, to products and motivate them to buy them, thus increasing sales (Ao et al., 2023; Chopra et al., 2021). Currently, peer approval is becoming increasingly popular, as social media is becoming the main advertising channel and is mostly dominated by young people (Roshdi et al., 2025). Therefore, the advertising strategy is also created accordingly, focusing on the individuals of this generation. Research by Młodkowska (2019) and Sheng et al. (2022) confirmed that video bloggers can influence consumer perception by providing video reviews of products that motivate consumers to purchase the advertised products.

Mood as a premise for decision-making can be defined as a feeling or mental state at a particular moment. Unlike emotions, which are always a reaction to the environment, mood is a state that already exists at the time an impulse is received from the environment. In addition, moods are states that tend to be long-lasting. Mood is an important variable in consumer behaviour. Mood determines when consumers intend to buy and where, in which store, in their city or outside of it, etc. All this can be considered a reason why sellers try to influence the mood of consumers. For example, they try to influence mood by decorating the exterior or interior of the building: colour combinations, shelf layout, etc. The overall atmosphere of the store is also important: the type of music, lighting, the behaviour of the sellers, etc. (Husič-Mehmedovič, Kukič, **Čičič**, 2012).

Thus, a person is not only a social but also an emotional personality, who, although imagining that they make decisions rationally, is nevertheless influenced by emotions, feelings, and mood in many cases. Therefore, advertisers are looking for their connections with the advertised product so that they can influence the consumer's attitude towards it accordingly. As can be seen, many factors work in a complex way, since emotions, feelings, and mood are rapidly changing, volatile factors, it is quite difficult to predict them, so several stimuli at the same time still achieve their goal. It must influence the consumer in such a way that they do not even feel a particular effect, and the act of choosing and buying is performed under the influence of positive emotions, so that they enjoy the result.

Elements of Advertising Communication Impact: Text, Image, Sound

Advertising influences the consumer, whether they like it or not. Good advertising knocks on the deepest corners of a person's soul, and sooner or later 'forces' them to purchase the advertised product (Jokubauskas, 2003). Advertising aims for the consumer to act in the way the advertiser desires. Advertising affects our thoughts and feelings, whether we want it or not (**Čereška**, 2004). Like any other act of speech, advertising primarily conveys information. As with any other communication act, it can be verbal or non-verbal: advertising transmits information through text, images, and sound. However, the goal of advertising, as previously mentioned, is not only to convey information, but also to influence the listener and elicit the desired emotional reaction (Smetonienė, 2009). When considering advertising as a communication process, it is impossible to distinguish when the image plays a greater role and when the text does. Word and image are two main sign systems, whose history dates to ancient times. The advantage of images is that they can show an object, while words can create abstractions (Smetonienė, 2009). An image allows for savings because it does not need to be retold or described in detail, and it can create additional meanings, present reflections, thoughts, the latest information, and save time. It is worth noting that the influence and role of sound are the hardest to evaluate. Although it is certainly undeniable, justifying its use in advertising with scientific research is perhaps the most difficult.

Advertising text. The most important message of the advertisement is the advertising text. Text is the main element of influence. Short and expressive language is easier to remember, and the brand name is reinforced in memory. Words

most often express feelings, thus capturing the feelings of the readers. Words also convey associations, attitudes, and ideas to the reader. For example, lipstick names like 'Eastern Peach', 'Calm Fire', 'Warm Coral' distinguish them from a multitude of similar products and give them appeal (Čereška, 2004; Pilelienė, 2015). The following ***verbal elements*** are distinguished: headline, subheadline, main text, slogan, explanations (Pilelienė, 2015; Župerka, 2008). ***Headlines*** play a significant role in the effectiveness of advertising texts. Their purpose is to attract the reader's attention so that they become interested in the advertising and read the entire text. It should be short (a statement of five to seven words) and psychologically effective. The headline is intended to convey the main idea of the advertisement. The headline should answer the consumer's question, "What's in it for me?" (Čereška, 2004; Pilelienė, 2015). The headline should lead to the subheadline, if necessary. Subheadlines, like headlines, should engage the consumer and encourage them to read the main advertising text. The ***main text*** presents the story of the product or service, showing the consumer how the product works, what feelings it evokes when used, and describing its benefits that the consumer will receive. It is important to encourage the consumer to act at the end: visit the website, buy products at a discount, etc. To make it easier for the reader, short sentences and paragraphs should be used. The benefits the consumer will gain from purchasing the product or service should be emphasized more than its features. Presenting a ***slogan*** in an advertisement increases the likelihood that the consumer will remember and distinguish the advertised brand from others. ***Explanations*** are short parts of the text around the visual element of the advertisement (Pilelienė et al., 2015). Ladd (2010) refers to a slogan as a composite element that includes the company's name, logo, and contact information.

Looking at the structure of the text itself, it is noteworthy that not only the structure is important but also what is presented in the content, the linguistic constructions and lexicon used, and how these tools are employed to attract attention. It is not enough just to write a text and think that it will interest the consumer. The text must act as an enticing message that not only encourages interest but also compels active action. Therefore, it is important to note that everything *new* in advertising texts influences the consumer, which is why many advertising texts start with statements like: *new, new prices, new formula, new collection*, etc. This creates admiration, entices with novelty, quality, and the fact that being among the first to buy and try new things is not only interesting but also a certain privilege and prestige.

One often debated and frequently not always recognized factor by consumers is the discounts and various lotteries offered. To prevent these from appearing too banal and obvious, certain lexical choices are used, such as *special price, holiday price, buy two get one free, gift with purchase*, etc., which unconsciously attract attention. Social psychologists refer to this as the '*bait method'.* Advertising texts that mention scientific experiments or proof that the product being promoted is very good can also be intriguing. Impressions are also created by numbers or mysterious product compositions – *impressive sounding names*: *e.g., 'contains nourishing ceramides'* (Smetonienė, 2009). If we analyse the lexicon of advertising texts more closely, we might notice that at first glance, seemingly solid and promising texts are merely collections of abstract phrases that say little. However, their connotative meaning is so pleasant to the eye and ear that consumers rarely perform linguistic analysis of texts; it is enough that these texts touch their emotional state and give the impression of a seemingly rational choice of products. Therefore, in advertising, certain so-called '*strong words'* can be distinguished, which the audience primarily notices*: secret, mystery, miracle, exclusive, special, success, etc.* Their semantic structure includes not only factual but also emotional information, creating an expressive impression. An important contribution to strengthening the impression is also the use of *euphemisms*. Therefore, advertisers offer not soap but fragrant freshness, not a trip but relaxation, not cosmetics but beauty. Things that could cause unpleasant sensations are softened – *sweating is called moisture, which causes discomfort, and toilet paper is called a gentle bath accessory*. There are also more words that seem significant at first glance but, upon closer examination, appear empty and meaningless — such words are called 'empty words' by advertising critics: *helps* (the most common), *possible*, *may be, refreshes, calms, cares, fights, creates a feeling*, etc. (Smetonienė, 2009). They not only impress the recipient but also allow advertisers to hedge against potential claims. For example, fights, but it's unclear if it will help; looks new but is not really new; will help you fall asleep, but you won't, it will only aid.

Thus, formulating a communication message is a *creative process*. Texts must be creative, interesting, useful to consumers to attract their attention, generate interest, and evoke desire and action (AIDA model). The main task of the message is to first ***attract attention***, then ***generate interest***, and finally ***stimulate the desire*** to buy—this is one of the most difficult tasks of a message. To communicate effectively, it is necessary to understand the consumer's mindset, behaviour, and how they make decisions. The message must convince the consumer that the product meets their needs and desires. And ultimately, ***to encourage action*** – this is the final task of a communication message, but it is also the most essential and important.

The impact of text on interactive internet platforms is also significant. Moreover, the internet features unique elements of advertising text construction, continuous generation of new texts, and storytelling. In the marketing context, storytelling is also widely used and studied as an effective tool for shaping consumer behaviour, brand building, and advertising. According to Milli (2023), storytelling can be used to encourage the audience to trust the organization

and to give clients the opportunity to learn about the company's values. Both verbal and visual narratives can create an emotional connection with consumers; strong brands tell compelling stories that evoke emotions and foster empathy because people tend to immerse themselves in stories (Milli, 2023).

Furthermore, online texts are important not only for what is visible to the consumer, but also for those that help distribute advertising via ***Google Ads*** or organically promote advertising banners. This influences consumer behaviour online. The clicking behaviour of consumers is also determined by how well the advertising matches the keyword or phrase entered in the search engine's search box. The better the advertising matches the keywords entered by consumers, the more likely they are to click on it, as they will evaluate it as the best match to their expectations for search results. The keyword or phrase used to encourage clicks can be incorporated into the headline, description, or website link (Jerath et al., 2014). The use of keywords not only in advertisement headlines but also in the visible link of the advertising is also seen as contributing to the impression that the advertisement better matches the entered keywords. Regarding the importance of the text itself in Google Ads search advertising, it should be noted that words like *'free'* / *'complimentary', 'cheaper', 'great'* / *'excellent', 'special', 'fantastic'*, etc., can motivate users to click on the ad. These words increase the attractiveness of the advertisement text and the likelihood of clicks. Another important aspect of the text is encouraging users to act, expressed through words like *'save'* / *'save now', 'buy'* / *'purchase', 'contact'* / *'get in touch', 'hurry'* / *'act now'*, etc. (Kim et al., 2014). An additional element that can motivate users to click on an advertisement is the brand name or website address mentioned in the advertisement (Jerath et al., 2014). Seeing either a recognizable brand or a link to a website increases consumer trust in the ad, especially if the brand and the website address in the advertising match.

Partly, another important element of the advertisement text is *humour*. It often works together with visual and video content and is closely related to it. Humour is considered one of the most convincing elements of advertising because consumers often prefer humorous messages over serious ones about the promoted products (Barry and Graca, 2018; Ren et al., 2023; Zhao et al., 2024). Humour, as a unique and powerful form of emotional appeal, plays an important role in both advertising and influencer marketing. It is estimated that about a third (32%) of advertisements worldwide contain some form of humour (Jones, 2023). This, in turn, influences consumers' attitudes toward products and their intentions (Hornik et al., 2016; Walter et al., 2018). Brands that focus most on influencer-created humorous content in their social media strategies tend to be more successful, increasing the effectiveness of their messages (Ren et al., 2023). Recent studies have shown that humorous, story-based, collaborative content created by influencers and funny videos of product use enhance followers' emotional value and engagement (Barta et al., 2023; Ren et al., 2023; Zhao et al., 2024), and such content has a greater emotional impact (Barney and Jones, 2023; Kapoor, 2024).

Images. Until the mid-20th century, images in advertising were simple and less important than words. Today, the situation is different. We live in a world of striking and exciting images. Advertising presents us with visuals and makes them real. Advertising encourages extravagant expectations because it is more dramatic and vivid than reality (**Čereška**, 2004). In modern society, widespread visual communication means that consumers communicate non-verbally, often receiving information through images. Images contain encoded messages that influence consumers' consciousness and perceptions of certain products and benefits. Woodman-Burgh and Govan-Brace (2010) state that visual consumption defines the 21st century because consumers now consume images rather than products, and the primary visual presentation – appearance – determines their decision to purchase a desired product. Most consumers first notice an illustration or visual and only later read the title, then the rest of the advertising message. Therefore, it can be said that the visual message in advertising is the primary source that creates the value of the advertisement and the promoted product.

Thus, visual communication plays a crucial role in effectively conveying messages and emotions, creating an attractive experience for consumers, and establishing a connection. Visual communication includes many forms, such as graphic design, photography, animation, videos, fine arts, etc. (Milli, 2023). In the rapidly evolving digital communication context, trends in social media communication increasingly use innovative, less formal visual solutions: emoticons, animated images (Mladenovic, Koštiál, Ljepava, Častek, and Chawla, 2022). It is important to note that images cannot only convey emotions but also create stories. Using visual communication as a storytelling tool, narrative, evokes emotions and makes ideas easier to explain and leaves a stronger impression on the audience. Since storytelling emotionally and consciously involves recipients, they become more receptive to the narrative's claims (Yu, 2006). Visual stories, according to Nikulina et al. (2024), are processed differently than other storytelling methods because viewers tend to instantly reconstruct their meaning based on prior experience and imagination. Cakmak (2023) states that effective visual symbols and storytelling methods are used in visual campaigns to ensure that the target audience is not only informed but also motivated to act. He argues that people think narratively rather than argumentatively, so campaigns using visual stories are more effective. Visual elements have the power to evoke emotions and influence consumers' attitudes toward a brand, and experienced emotions can stimulate the reaction and behaviour of the target market. However, Zhao and Ji (2019) note that emotions can elicit different responses, so the message sender must understand what causes them and how to use them properly. Visual communication tools are widely used in advertising (Danaitis and Usovaitė, 2012),

and depending on their purpose, graphic design solutions, and the goal to attract consumers' attention, consciousness, and trigger certain behavioural aspects, they are associated with visual content.

During a study by Bakhshi et al. (2014) on the impact of visual elements on consumers, it was found that *photos showing a human face* attract more attention than those without. Pilarczyk and Kuniecki (2014) found that happy facial expressions promote trust in the brand, and when consumers see a sad face or emotion in a photo, they start feeling the same (emotional contagion). *Photos with richer colours or with filters* attract more attention than unedited ones (Bakhshi et al., 2014). The authors state that the connotative meaning of colours influences consumers' desire to share intriguing, impressive, and elegant images more than calm or relaxing ones. Ohman (2017) also contributed significantly by providing insights that *images depicting animals* are more liked because animals are associated with positive emotions. It is emphasized that cats, dogs, birds, and horses are the most used animals in advertising: dogs are mainly used to promote products or services for families, while horses are used to demonstrate strength and masculinity.

Regarding the influence of images on advertising communication, it is also necessary to mention the importance and influence of certain new marketing communication channels on consumer choice and behaviour. Ibrahim et al. (2015) introduced a concept of visually convincing website design, which reveals possible website design elements that motivate users to stay longer on the site. In their study, visual persuasion refers to any image or textual message that influences the initial impression of the user and thereby affects their motivation and behavioural intention. The study found that a website receives more positive feedback when it is visually attractive but could not confirm that visually convincing design influences perceived informativeness, convenience, and engagement with visual content. The authors describe this because of using templates in website creation, where websites have similar design features, and users do not feel a sense of uniqueness. Aljukhadar and Senecal (2017), analyzing e-commerce marketing strategies and consumer behaviour, found that videos improve perceived information quality, trust, and excitement among users who browse without a specific purchase goal. For users with specific goals, searching for products, both traditional text and video marketing had an equal impact on their satisfaction. These types of studies are of particular interest to neuromarketing, which analyses consumers' attention focus when browsing online stores, reading menus, arranging products on shelves, and positioning products in stores. Based on this, advertising communication strategies are developed, and visuals are created. The display of images in advertisements influences consumers' memory and attitude because visual information stimulates better recall and leads to greater engagement and decision-making to purchase the advertised product or service (Lin et al., 2012).

Regarding the influence and significance of images, it is important to separately mention the use of colours in advertising. This is one of the most important codes through which advertising conveys information and influences consumers emotionally and psychologically. Colour generally increases the informational value of the image, making it appear more natural and closer to reality (Čereška, 2004). Colour plays a vital role in developing marketing or advertising campaigns, as it's what consumers notice first - so choosing the right colour can effectively convey targeted information. Each colour has its own meanings, associations with objects, real-life situations, emotions, and even moods. Colours are a form of non-verbal communication associated with certain symbols and meanings encoded in the human subconscious, so it is important to know how certain colour associations are perceived by consumers when creating advertising. It should be noted that colour associations formed early in human history, where each colour had its assigned meaning, and simply looking at a certain coloured object would evoke corresponding symbols in the subconscious (Luscher and Scott, 2008).

Colour is an extremely unusual phenomenon. Physiologists study the effect of colour on human eyes and brains and investigate their anatomical connection. Psychologists are interested in the effect of colour on our psyche. (Čereška, 2004). It is observed that consumers tend to spend more money in a blue environment (Valdez and Mehrabian, 1994) or a green environment (Arnould, 2004). It is not recommended to use grey colour in advertising. In addition, colours can cause general associations together with other advertising elements. For example, colour is often associated with taste. It is believed that the colour orange stimulates appetite, and when looking at the colour yellow we can feel sourness, because an association with a lemon arises. In ice cream advertisements, the product is usually white, even slightly bluish, similar to real ice cream - to emphasize the idea that ice cream is cold and refreshing. The impression of the weight or lightness of the object being depicted also depends on the colour. For example, lighter boxes look lighter than dark colours. The motif of colour and smell is very important in perfume advertisements. Form is not related to colour, but colour gives emotionality to the form, can convey the desired mood. This shows that colours are significant in creating advertisements, as they convey a certain emotion to consumers and accordingly determine their involvement in the brand (Ohman, 2017), encourages the consumer to act (Domiszewska, 2023). It has also been established that the colour range of video content affects the popularity of the brand's content on social media and, at the same time, determines consumer engagement (Zailskaitė-Jakštė et al., 2017). Based on psychological theories, it is stated that colours attract attention, convey specific meanings, communicate information, awaken certain emotions and motivations. In marketing, colours determine consumers' attitudes, feelings and emotional reactions to product packaging, advertise-

ments, logos, etc. In this way, colours also affect the consumer's purchasing decision. In a virtual environment, certain colours used can affect the time spent on a website and the memorization of elements.

Consumer engagement and the decision to buy are also determined by the visual expression of the ***packaging***. When choosing food products at the point of sale, consumers usually evaluate them according to their visual appearance, which is determined by a large supply of similar goods, which complicates the consumer's search and selection process. Effective packaging guarantees that the product will be noticed by the consumer, it will encourage interest, purchase intention and evoke positive emotions and good impressions (Kotler, Keller, 2007; Becker et al., 2011). According to Vilnai-Yavetz and Koren (2013), the packaging and its constituent elements create relationships with consumers, conveying to them functional and aesthetic information about the packaged food, consumers often identify the packaging with the product itself. Becker et al. (2016), Simmonds and Spence (2017) note that packaging, of different elements, affects people's psychology and conveys a certain perception of the food products being purchased. The photos used on the packaging help to better imagine the taste, smell or even the feeling of eating the product (Becker et al., 2011; Holmes, Pawan, 2012). Photos and their colours, according to Clement (2013), Wilkins, Backenuyte and Butt (2016), help to understand tastes (sweetness, spiciness, saltiness, etc.) faster, to evaluate the ecological, naturalness and healthiness of food. According to Clement et al. (2007), more than 70 percent of the decision to purchase a product is made right at the point of purchase, in front of the shelves. One visit to the store usually lasts about twenty minutes, and the decision-making process takes an average of twelve seconds, so the visual appeal of the packaging must be as effective as possible in a short time. The product packaging can determine the consumer's choice, influence decision-making process and purchasing behaviour (Tassawa & Khumhome, 2023). Visual packaging elements create a brand image and can directly affect the consumer's decision to buy (Wang et al., 2023) and affecting the consumer's emotions (Lopez-Mas et al., 2022).

Sound. This is especially effective in radio, TV and cinema advertisements, as well as in social media advertisements. The timbre of the voice, the manner of speech, the same words spoken quickly and loudly or quietly and emotionally cause opposite associations and create a completely different effect. A gentle and friendly tone is more pleasant to listen to (Čereška, 2004). Properly selected music helps to better remember the advertised object. The advertising effect of music has not yet been fully investigated; it cannot be precisely defined. Music not only conveys certain feelings but also evokes them.

Scientists have studied that the main properties of sound that determine the success of an advertisement are tempo (fast, slow) and tonality (high, low). Also, one of the important factors is whether people are familiar with these sounds from before (Shevy and Hung, 2013). Different tonalities or melodies can evoke different emotions: short and sharp melodies evoke feelings of happiness and excitement, while longer and softer ones evoke feelings of sadness and melancholy. And the ambient noise of a medium level (70 dB) in the environment increases the probability of purchasing new products, compared to the low level (50 dB) ambient noise (Mehta et al., 2012).

The results of other scientific studies show that the participants' preferences for products and the desire to buy depend on the frequency of the music. Participants who listened to high-frequency music rated the products more favourably, and their desire to buy was greater than that of participants who listened to low-frequency music. One possible explanation for this may be that high-frequency music tends to be perceived as louder (Mcbeath and Neuhoff, 2002), and loud music tends to increase excitement (Morrison et al., 2011; Welch and Fremaux, 2017). In addition, although this was not the focus, another noteworthy observation related to the participants' retrospective perception of answers emerged. When asked about the main criterion that could have influenced their answers, no participant indicated music as a decisive factor. This discovery was not surprising. However, even when directly asked about the possible influence of music on their answers, the results showed that the participants thought that music had almost no influence, if any. In summary, the results of this study highlight not only the possible influence of music frequency on consumers' emotional and behavioural reactions, but also the extent to which this influence can manifest itself mostly beyond their consciousness.

Speaking of perception, another part of sound frequency research was conducted in the context of sensory integration, especially in the field of taste perception and visual attention, where the integration of sound modality (i.e., frequency) with visual and taste modalities was examined. For example, in the context of taste, Zampini and Spence (2004) showed that by simply manipulating the frequency of the sound feedback generated by chewing, the perceived crispness and freshness of crisps can be improved. In the context of vision, Gallace and Spence (2006) found that if the frequency of the sound stimulus matched the size of the visual stimulus, participants were able to quickly and accurately assess size differences.

Based on these and similar findings about the nature of multi-sensory experience, marketing researchers have begun to explore the impact this interaction can have on consumer decisions (Krishna, 2012). In this regard, one of the first marketing studies, which focused on sound frequency, was conducted by Lowe and Haws (2017). Based on a similar

intermodal relationship and the basis of semantic compatibility, Sunaga (2018) found that music frequency (high versus low) can be used to adjust consumers' perception of psychological distance in marketing communication, which affects choice and willingness to pay. However, these studies are quite new and rare in the marketing literature.

Clearly, sounds do not have such an obvious effect as colours or forms and allow the person to create their own images. However, if a certain sound is used, which is clearly associated with certain images, it can be said that a controlled effect is created, because, when a person hears a sound, the imagination is limited by the image already created. The sounds we hear and associate with a certain brand, its advertising, inevitably affect our perception of the product. So, we can say that music is one of the parts of the brand image. It not only creates additional, aesthetic value for the brand, but at the same time can help increase brand recognition, emphasizing the attractiveness of the brand. Properly selected music helps to better remember the advertised object. In addition, music has a strange power to penetrate very deeply into people's subconscious, to stimulate imagination (Bakanauskas, 2012). In general, music touches consumers' lives at various moments (Kellaris and Kent, 1993; Rentfrow and Gosling, 2003). Sellers often use it as a weapon of influence (Kellaris and Cox, 1989). Music, a frequent feature of radio, television and internet advertising and an omnipresent feature of the retail environment, which consumers encounter when watching media, shopping, waiting for service, boarding planes, waiting for a phone call and in many other situations. It is nearby but so integrated into the general environment that the consumer does not feel its effect, perhaps does not even hear it, but the ability of music to act subconsciously determines its power and effect. It has close links with the emotional state of consumers and determines the emergence of certain feelings and moods. It is obvious that music can evoke feelings of pleasure (Sweeney and Wyber, 2002) and convey the intended emotions, such as anger, sadness, happiness and fear (Juslin, 2000). It can reduce stress and promote a feeling of relaxation in a stressful waiting situation (Lee, Henderson and Shum, 2004; Tansik and Routhieaux, 1999). Pleasant feelings caused by music can affect cognitive activity (Chebat, & Vaillant, 2001), encourage a positive evaluation of the overall waiting situation experience (Cameron, Baker, Peterson, & Braunsberger, 2003), although reactions can vary greatly depending on the appropriateness of the music (Vermeule, Beukeboom, 2016; North MacKenzie, Law, & Hargreaves, 2004). When the goal is persuasion, not memorization, the use of popular hits can increase message acceptance by attracting attention, reducing the ability to argue, and promoting a less critical mindset. This means that advertisements that play well-known popular music may seem more like entertainment than an attempt to influence. Therefore, such advertisements can be treated less critically. It has also been found that background music affects the desire to spend and the intention to buy (North and Hargreaves, 1998). For example, north et al. (2000) observed links between how much people like the style of music played in a bar and a bank (e.g., classical, easy listening, pop), the perception of the atmosphere, and the desire to spend.

One of the most interesting discoveries related to music is the obvious ability of music to contract or expand subjective time, compared to objective, clock time. This has many applications in shaping consumers' time experience as they shop, browse the internet, wait for service, or stand in queues at cash registers and other queues (Kellaris, 2018). Thus, as A. Pister states, in addition to the emitted immanent, purely musical information - melody, harmony, rhythm, form, texture, etc., - the art of sound is able to encode certain non-musical meanings by means of musical expression (2005).

The relationship between text, image and sound. The ability to positively and appropriately combine visual, verbal, and textual intensity manifests itself in the most effective emotional response, which is crucial for selling products or services (Bezijian, Calder, Iacobucci, 2008). Since each advertisement is a unique creative work, its overall appeal and impact are revealed not by individual components but by the whole (Dobržinskienė, 2012). However, scientific literature often examines and analyses only two components: image and text, text and sound, or image and sound. Less attention is given to the analysis of sound in advertisements. Studying the impact of sound is complicated by methodological research questions and challenges. This issue also pertains to analyzing all three main elements of advertising simultaneously – what methodology to base their interaction on, which influences consumer behaviour and decision-making regarding purchasing advertised products or services. Despite the complexity, some aspects are linked to consumer choice and attitude in individual studies (Heaton, Paris, 2006; Murray, 2020; Saputra & Santoso, 2021). On the other hand, the comprehensive multimodal influence of advertising text, image, and sound is felt only by the consumer, but when creating an advertising message, these elements can be linked by assessing each one's potential impact separately. The most important thing is that these elements collectively in one advertising message carry aesthetic, informational, emotional, or even psychological effects on the consumer. The latter manifests as appeals to people's weaknesses and desires (Rajasri et al., 2024), driven by stimuli, an endless human need for various solutions, advice, miraculous products, or objects. And these hopeful (or promising) solutions are provided by advertising (Džanič, 2013). Advertising professionals are left to discover hidden signals and signs that influence consumer attitudes and decisions and accordingly develop advertisements. It is very important to remember that not only the combinations of advertising elements determine the impact of advertising messages on consumer behaviour, but also their originality, novelty, relevance, usefulness, and the creativity that links them. Studies have shown that advertising creativity cannot be separated from two main elements

– novelty and relevance (Stathopoulou et al., 2017). Novelty includes originality and uniqueness (Rosengren et al., 2020), while relevance pertains to content appropriateness and usefulness (Smith et al., 2007). All elements complement each other, linking advertisements with brand strategy and consumer goals (Hayes et al., 2020) – and has also been confirmed to positively affect consumer attention, recall, and attitude (Lee and Hong, 2016). Creative advertising is defined as the ability to generate new, unique, original ideas in advertising, i.e., advertising must constantly seek new forms and methods to remain original and not necessarily template based. Continuous variation in the combination of text, image, and sound elements can help reveal advertising creativity. As competition for the discerning consumer's attention intensifies, advertisements are becoming more creative, inventive, and new channels for delivering advertisements are being developed. Advertisements now use a broader colour palette and soundtracks, creating both textual and visual stories, with an increase in video content broadcast by influencers. Greater attention is paid to aesthetic appeal, with claims that visually attractive products or advertisements can attract consumer attention (Kaspar et al., 2019), and evoke positive consumer evaluations (Shi, 2021). Stimulating multiple sensory stimuli simultaneously gradually increases the entertainment value of advertising, making viewing more interesting and enjoyable from the consumer's perspective (Febriyantoro, 2020). Such advertising can be called modern, which, according to Campbell (2014), works in a very strange way – showing that it doesn't matter whether it has an impact. Thus, when someone says, "advertising doesn't work on me", the advertising has achieved its goal. It gives us the feeling of being distant from it. Because modern marketing is not what is done for the consumer, but what is done on behalf of the consumer, i.e., the focus is on helping people buy and make decisions rather than pushing products or services on them. Therefore, the task of marketing professionals is to provide the buyer with information when needed and in the right form. Researchers have observed a real paradox in advertising – coercive compliance despite free choice. Even a term has been coined for this: *voluntary compliance*. Advertising must first emotionally attract the recipient's attention, then interest them with content, and finally evoke some reaction (Smetonienė, 2009). To achieve this, harmony among all elements used in advertising, purposeful application, and the right emphasis are important.

NEUROMARKETING

The Impact of Neuromarketing Research on Consumer Behaviour

The study of consumer behaviour and the desire to better understand why people make certain decisions and why these decisions differ under the same conditions has led to increasing interest in neuroscience, which has evolved into neuromarketing, supplemented by knowledge from psychology and sociology (Ahmed, NorZafir, Rami Hashem et al., 2023; Lim, 2018; Stanton, Armstrong, and Huettel, 2017). Marketing has always aimed to understand consumers, identify their tastes and needs, and stimulate the market through supply and demand. In the 1990s, technological advances allowed for more in-depth brain research, leading to the development of neuromarketing as a discipline studying brain processes that influence behaviour and decision-making in marketing (Ortegon and Muniz, 2025). Neuromarketing is based on methods from neurological sciences, aiming to identify and understand fundamental brain activities of consumers to increase the effectiveness of marketing activities (Boricean, 2009). It is defined as the application of neurological methods to analyse and understand human behaviour in markets and marketing exchanges (Mansor and Isa, 2020). Its goal is to understand consumer behaviour by studying brain activity, physiological reactions, and other biological signals. This is a rapidly growing interdisciplinary research area that is gaining increasing interest. It was found that traditional neuromarketing methods often do not match actual consumer behaviour with declared responses, leading to the understanding that consumers often cannot recognize or articulate many things about themselves (Ackermann and Mathieu, 2015; Singh, Alhassan, and Khoshaim, 2023). This can be explained by the fact that conscious consumer decisions are only the "tip of the iceberg," as 90% of information received is processed unconsciously (see Krajnovic et al., 2012; Jacobs et al., 2025). One of the main reasons for the growth of neuromarketing science is the perception that human decision-making deviates from rational choice (Jain, 2022). Accordingly, neuromarketing research focuses on the unconscious phase of decision-making, where consumers process and evaluate stimuli at an unconscious level before moving to conscious, rational decision-making (Misra, 2023). The mysterious aspect is that our brains make decisions before we are aware of them and before presenting a choice. Although the brain weighs only about 1.5 kg, it controls all body functions, including memory, emotions, creativity, and intelligence. The brain receives information through five main senses: hearing, sight, touch, smell, and taste. Therefore, neuromarketing research can reveal what *sensory stimuli* to incorporate into product development to evoke consumer satisfaction. People can usually say what they want and what they like, but they often do not know where that value comes from or what determines their desires. But it's very simple: by inducing certain emotions, using hypnotic words and pleasant images in advertising, changing the colour, lighting, and music in a store slightly, we are already ready to buy (even things we don't really need). Using advanced

brain activity monitoring technologies, neuromarketing offers a unique opportunity to better understand consumers' subconscious reactions to marketing stimuli, opening new perspectives for creating more effective and personalized marketing strategies (Bhardwaj, Rana, Behl, & Caceres, 2022; Zeng & Marques, 2023).

The origins of neuromarketing began when interest in consumer behaviour, decision-making, and emotions was sparked to better adapt marketing strategies to consumer expectations and needs (Kumar, 2015). The impetus for these studies was the discovery of the "pleasure centre" in the brain (hypothalamus) in the early 1960s, but the formation of neuromarketing as a scientific discipline began only in the early 21st century. The first use of the marketing term was by Ale Smidts in 2002, defining it as the application of neurological methods for commercial purposes (Casado–Aranda, Rodriguez–Sanchez, & Sancho–Esper, 2024).

Neuromarketing is a rapidly growing field aimed at understanding how various stimuli affect emotions, perception, and decision-making processes. In today's competitive market, neuromarketing allows organizations to delve deeper into the emotional and cognitive motivations behind consumer behaviour, which is crucial for attracting consumer attention. The applications of neuromarketing are broad – from product design to increasing advertising effectiveness, providing valuable insights into the emotional connection in brand building (Cruceana et al., 2024). Neuromarketing examines consumer thinking processes and identifies factors influencing purchase decisions. Thanks to neuromarketing, physiological changes can be measured (using neuromarketing tools) and emotional or cognitive reactions decoded. Therefore, the neural responses of consumers' brains to advertising campaigns can be studied by observing physiological changes during viewing and analyzing the emotions that triggered these changes (Montakhab Madani et al., 2025). Neuromarketing measures physiological and neural signals to gain insights into clients, motivations, preferences, and decisions. This helps companies shape creative advertising, product development, pricing, and marketing strategies. Neuromarketing can also be used to better understand consumer behaviour, including subconscious and emotional responses to brands. The main function of neuromarketing is to explore and understand the subconscious of consumers, which influences their decision-making process, providing specialists with more structured insights into brain activity (Almeida et al., 2025). Neuromarketing is a marketing technique focused on individual emotions and subconsciousness to create a strong connection between clients and the offered product or service. Its methods involve various processes and utilize brain functions that influence cognitive, attention, and emotional abilities to affect and stimulate consumer preferences.

Neuromarketing is a dynamic field combining principles of neuroscience with marketing strategies. Essentially, it seeks to explore the depths of the human brain to uncover hidden motives, emotions, and cognitive processes that influence consumer behaviour. The importance of neuromarketing lies in its ability to provide marketers with unprecedented insights into unconscious and emotional factors affecting decision-making. Using neuroscientific data, marketers can better understand consumer preferences, attention patterns, and the neural mechanisms underlying purchasing behaviour. This knowledge can be used to improve marketing strategies, optimize product packaging, and enhance overall advertising campaign effectiveness (Hussain, 2025).

Researchers can assess how consumers react to different product features, service quality, and overall customer experience by evaluating consumer responses to products and services (Elizbaryan, 2024). The strength of neuromarketing lies in its ability to identify hidden patterns of consumer behaviour. For example, studies have shown that brain areas associated with pleasure, such as the nucleus accumbens, are activated when exposed to attractive brands, indicating a direct link between visual stimuli and desires (Zenozain, 2025). Based on neurological reactions, this discipline helps predict consumer behaviour in the market, thus enabling companies to make more informed decisions about product development and marketing strategies that meet consumer expectations and evoke positive emotions and associations (Beličková & Kusá, 2023). This allows organizations to create more personalized and effective advertisements. One of the key insights of neuromarketing is that a large part of consumer decision-making is driven by emotions rather than rational analysis. Neuromarketing explores the emotional reactions triggered by colours, sensory perceptions associated with packaging, and subconscious associations related to brand logos. It investigates the neural pathways that shape long-term memories of advertising campaigns and products, shaping consumer preferences and loyalty (Elizbaryan, 2024).

In retail, companies use neuromarketing techniques to optimize store layouts and product displays. For example, studies have shown that products placed at eye level are more likely to be noticed and purchased. In addition, companies can use specific colours, lighting, and sounds to evoke certain emotions in shoppers. For example, warm, welcoming colours like red and yellow can encourage impulsive purchases, while calming blues and greens can create a sense of trust and reliability. Online companies also use neuromarketing techniques to improve user experience and drive conversions. By analyzing how users interact with websites, companies can optimize their digital platforms to attract and retain consumer attention. For example, strategically placed images, call-to-action buttons, and personalized recommendations can trigger emotional responses that increase click-through rates and boost sales. Websites can also be designed to create a sense of urgency (e.g., countdown timers for promotions) or a sense of exclusivity (e.g., limited time offers), both of which can stimulate the brain's reward system and encourage purchasing behaviour.

Neuro-marketing research shows that a sensory environment, such as smells, sounds, or colours, can have a significant impact on consumers' purchasing decisions. Neuromarketing is closely related to sensory marketing because it helps us understand the brain processes associated with perception and behaviour (Bortolotti, 2025).

Vision. Vision is undoubtedly the most used sense in marketing. Colours, product and packaging design, logos, and images are all visual elements that can influence consumer perception (Bortolotti et al., 2023). Vision is the most seductive sense and very often dominates over other senses and has the greatest power of persuasion. This sense allows people to notice certain differences or changes in new packaging, a new store interior, or a new product design. The power of sensory marketing lies in its ability to delve into *subconscious processes*. This is consistent with the findings of neuroscience that sensory stimuli can activate specific brain regions associated with emotions and memory (Bortoletti, 2025). In addition, sensory marketing can be particularly effective in differentiating products in crowded markets. Visual stimuli such as colours, shapes, proportions, and movement can subconsciously influence consumer attention, perception, memorization, and final decision-making. For example, round shapes are often perceived as softer, cozier, while angular shapes are perceived as stronger and more reliable (Juarez, 2020).

Colour is one of the key aspects of visual marketing. Consumers perceive colours subconsciously, creating associations and forming opinions even before they consciously perceive them (Bortolotti et al., 2023). Studies have shown that changing the hue or intensity/saturation of colours in food and beverages can sometimes have a dramatic effect on consumer expectations (Spence, 2018; 2015). Warm and cool colours can stimulate consumer appeal and interact with other visual cues. In addition, colour temperature can affect consumption. Therefore, understanding the role of colour in sensory marketing can provide valuable insights into consumer behaviour and decision-making processes (Bortoletti, 2025). Colour is a powerful communication tool that can influence our mood, feelings, and even consumer behaviour. Brands strategically use colours to evoke specific emotions and sensory experiences that align with their brand identity. As Elliot and Maier (2014) noted, colour can significantly affect consumer perception and behaviour, for example, consumers are attracted to warm colours such as red and yellow, so they are designed to attract consumer attention and for purchasing situations associated with impulsive purchases.

Taste. Lindstrom (2008) confirms that taste is recognized by special structures called taste buds. Humans have about ten thousand taste buds, but everyone perceives taste differently. Girls are thought to be more sensitive to taste than boys because they have more taste receptors. As people age, their sense of taste changes and weakens, making them more likely to enjoy food that they considered too strong as children. Taste and smell are closely related chemical senses; during tasting, the smell is perceived together with the tastes, so taste marketing is closely related to smell marketing. Nevertheless, due to its specificity, taste is considered the least effective sense, except in the food industry (Hong, 2022), although properly selected tastes and smells can subconsciously affect consumer emotions and purchasing decisions.

Smell is one of the most important senses that has a great influence on consumer behaviour and marketing strategies. The connection between smell and memory allows brands to deeply embed themselves in the consumer's subconscious. In addition, smell is the only sense that cannot be turned off and is incredibly powerful in evoking memories. Lindstrom (2008) claims that smell can change our mood: research results have shown that the effect of a pleasant smell on mood improves by 40%, especially if that smell reminds of a happy moment. It also has a positive effect on consumer image, the price level they are willing to pay, and the amount spent.

Hearing. Music can stimulate customer perception emotions (Meyers-Levy, Bublitz, & Peracchio, 2011). Most products and services have branded sounds that create brand awareness in the target market (Krishna, 2011). For example, the sound of a certain brand's door closing, the crunch of crisps, etc.

Touch. Touch is very important because it enhances an individual's experience when interacting with a product. It is estimated that there are 50 receptors per 100 square millimetres, each with 640,000 micro receptors in the brain for sensations (Lindstrom, 2008). As people age, the number of micro receptors decreases and some sensitivity in the hands is lost. There are more than 400,000 sensory receptors in the human skin that can be activated when people touch different surfaces and materials of a particular product. For example, it has been observed that rougher, matte packaging gives the impression of higher product quality and luxury, while smooth, glossy packaging is associated with modernity and technological progress (Hong, 2022).

Neuromarketing Ethics

Neuromarketing is used to better understand consumer habits, desires, and needs. Since it uses medical devices to obtain the necessary knowledge about the consumer, this raises questions of ethical compliance. The greatest concern in neuroscience is the possibility of manipulating consumers in making purchasing decisions: that specialists could discover a 'buy button' or 'mind control' and activate it even without the consumer's wish (Onyedi, 2023; Ferrell, 2025). The possible invasiveness of neuromarketing technologies is criticized, arguing that the information obtained about the consumer's subconscious behaviour can be used to manipulate consumer behaviour in such a way that commercial

interests are prioritized over individual well-being (Hussain, 2025). Neuro-marketing research requires access to highly sensitive personal data, including brain activity information, which provides unique insights into consumer behaviour and decision-making processes, but at the same time poses a threat to individual privacy. To avoid this, it is crucial that neuroscientific methods are used ethically in neuromarketing experiments. This includes ensuring proper participant protection, full disclosure of research objectives, risks and benefits, obtaining informed consent, establishing clear protocols for addressing both basic and accidental neuroscientific findings, and conducting ethical review before conducting the research. In addition, the scientific rigor of neuromarketing research must be established and proven, ensuring the reliability and validity of the findings through transparent reporting (e.g., detailed experimental procedures and public disclosure) (Hussain, 2025). The intersection of artificial intelligence and neuromarketing has further strengthened these ethical aspects. As AI-powered algorithms become more sophisticated in analyzing and interpreting neurological data, the potential for targeted and personalized marketing strategies that can exploit consumer vulnerabilities has increased (Hussain, 2025). AI-based insights should be used to improve the consumer experience, not to take advantage of it. Despite the doubts and fears that arise, there is still documentation, codes of ethics for neuro-marketing research protect against the exploitation of people's unconscious behaviour, especially since the research itself does not yet provide completely clear answers about consumer choices, so it cannot be said that universal laws of consumer behaviour have been discovered that could harm the well-being of society. However, without a doubt, there must always be defined limits so that they are not crossed and no harm is done to people.

CONSUMERS' ATTITUDES TOWARDS THEIR PURCHASE BEHAVIOUR

To analyse consumers' attitudes towards their purchase behaviour, a quantitative research method was chosen – an anonymous questionnaire survey. The prepared survey consisted of closed-ended multiple-choice questions, open-ended questions, and questions where respondents were asked to evaluate statements on a Likert scale. The survey questions covered demographic data, purchasing habits, product selection criteria, and opinions about advertising. The study analysed the frequency of purchases, considering certain product/service groups. Respondents were asked to evaluate statements related to financial behaviour and impulsiveness when purchasing. Descriptive statistics were used for data analysis to identify key trends and patterns. 359 respondents participated in the survey.

The respondents who participated in the survey were evenly distributed by age (Fig. 1). Most of the questionnaires were completed by those aged 31–35 (15%), but there were slightly fewer aged 16–20 (14%), 36–40 and 21–25 (12% each), and 26–30 (11%) respondents. Older respondents make up a smaller proportion, but this was probably since the survey questionnaire was distributed through social channels, which are used less frequently by this demographic. It can be observed that the survey was mostly attended by middle-aged respondents, who also constitute the largest purchasing power. Younger respondents have less purchasing power, but they are more attentive and actively notice advertising communication, which shapes them as potential consumers. Older people have more experience in consumer behaviour, but may be less attentive and tolerant of advertisements, and the reach of some advertisements may also be limited due to the increasingly popular social advertising broadcasting channels.

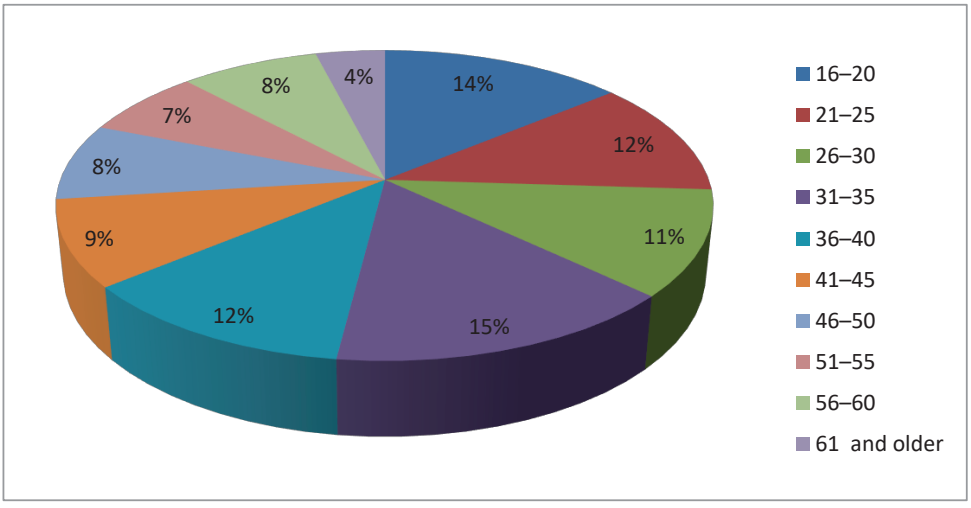


Figure 1. Distribution of Respondents by Age

The respondents were divided unevenly by gender, with most of the active survey participants being women (75%), and men being more passive (25%). This shows that women are more active and willing to express their opinion.

When assessing the impact of advertising communication on consumer behaviour, it is important to mention the amount of monthly income, as this can be one of the factors that can influence attitudes towards advertisements and advertised products (services). When evaluating our financial capabilities, we react accordingly to certain products, pay more attention to discounts, or seek to maintain our status and prestige by choosing luxury goods. Of the respondents who participated in the survey, most receive average or slightly lower monthly income (35%) (Fig. 2). Considering that a significant number of young respondents participated in the survey, clearly their monthly income is not yet very high: 19% have an income of up to EUR 500 and 21% EUR 501–1,000. Higher than average income (EUR 1,501–2,000) is received by 16% of respondents, and 6% (EUR 2,001–2,500) and 3% (EUR 2,501+) of respondents receive high monthly income. In other words, the respondents who participated in the survey receive average or lower monthly income.

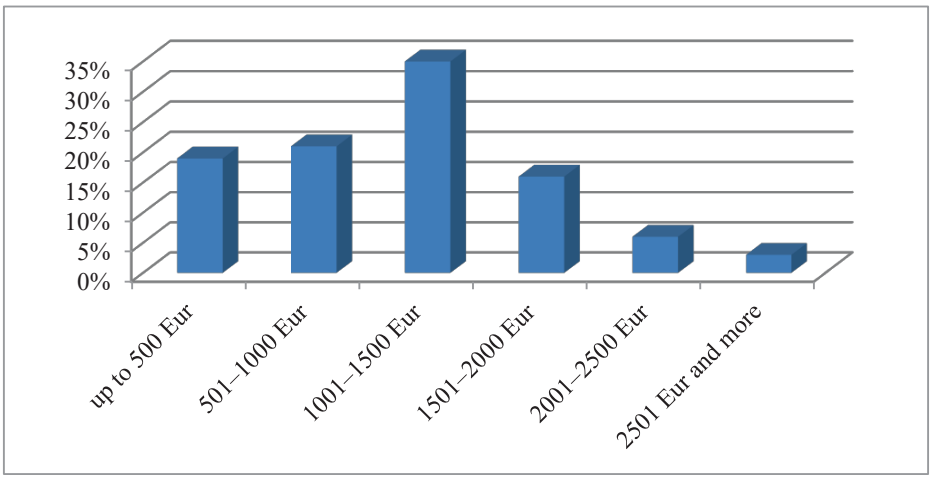


Figure 2. Respondents' Monthly Income

The amount of income most likely determines the answers to the next question about the factors influencing product selection. Many respondents cite price (40%) and needs (37%) (Fig. 3). It can be assumed that the amount of income received is directly related to the corresponding factors determining the respondents' purchases. However, the discount factor was not chosen among the most frequent (11%). It can be assumed that respondents more often look for cheaper products rather than chasing discounts, but it may be that respondents simply think so, and only an experimental study could reveal how they actually behave. As stated in scientific literature, consumers do not always behave exactly as they answer in surveys. Of other factors, brand (4%), product reviews (3%), other people's opinions (2%), and advertising itself (1%) should be mentioned. Another 4% of respondents mentioned that they simply shop spontaneously, without paying attention to various factors. The most surprising result is the very rare selection of the advertising factor, which makes one doubt whether respondents are really so resistant to this type of communication, or merely confirm the theoretical assumptions that the best and most modern advertising is the one that is not felt, which does not force one to acquire something, does not push products or services, but is only an advisor helping to make decisions. That advertising which seems not to care whether it has an impact, but in reality, reaches its ultimate goal (Campbell, 2014). In most cases, consumers in such situations claim that advertising does not affect them.

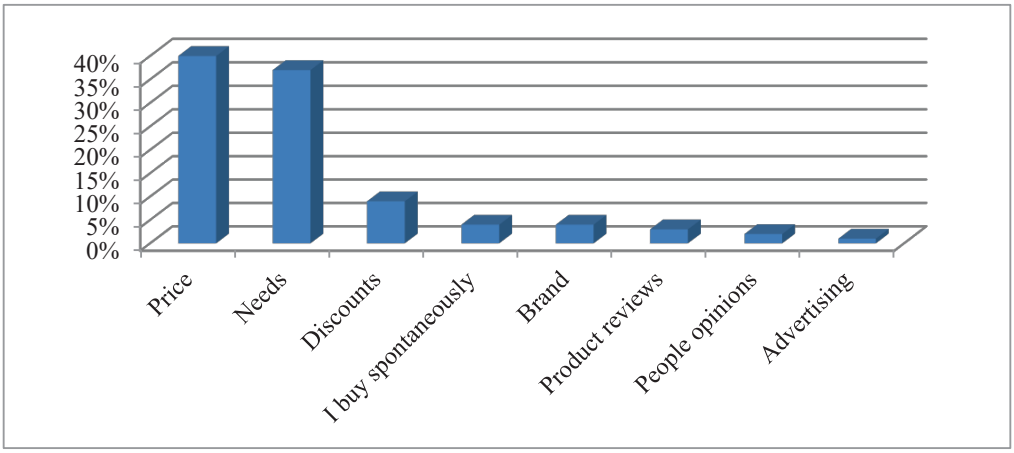


Figure 3. Factors Determining Product Choice

The mentioned assumption is confirmed by another question in the survey – how often do you buy products of unknown brands. As can be seen in the diagram (Fig. 4), more than half of the respondents answered that they rarely buy products of unknown brands (58%), very rarely buy 12%, never - 4%. This means they buy only the production of well-known brands. And to know the brand itself and its production, one needs to have information about it. This information is usually in the field of advertising communication. Therefore, it can be assumed that the respondents simply do not evaluate the advertising factor, but when making a purchase decision, they choose products they have seen and heard about. And only a third said they very often (2%) or often (24%) choose products of unknown brands.

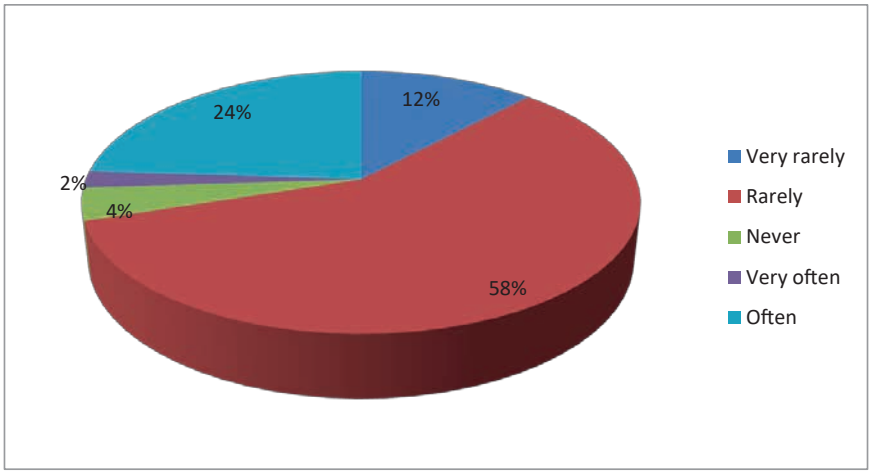


Figure 4. How Often do you Buy Products from Unknown Brands?

Today's advertising should really be called modern, teaching to be close to the consumer and push them towards the choice to buy a particular product, as soon as they need this help. This is shown by the respondents' evaluation of advertising: 24% believe that advertising is needed to inform about the emergence of new goods, and 23% to introduce the brand. In other words, we return to the idea that advertising, according to respondents, is important because of the information it provides. Only a small part of the respondents (7%) think that it manipulates the feelings of buyers, a little more chose the answer that advertising has an influence (18%). In other words, respondents do not think that advertising is only intended to somehow deceive. This is confirmed by 4% saying that advertising forces them to buy certain products (Fig. 5).

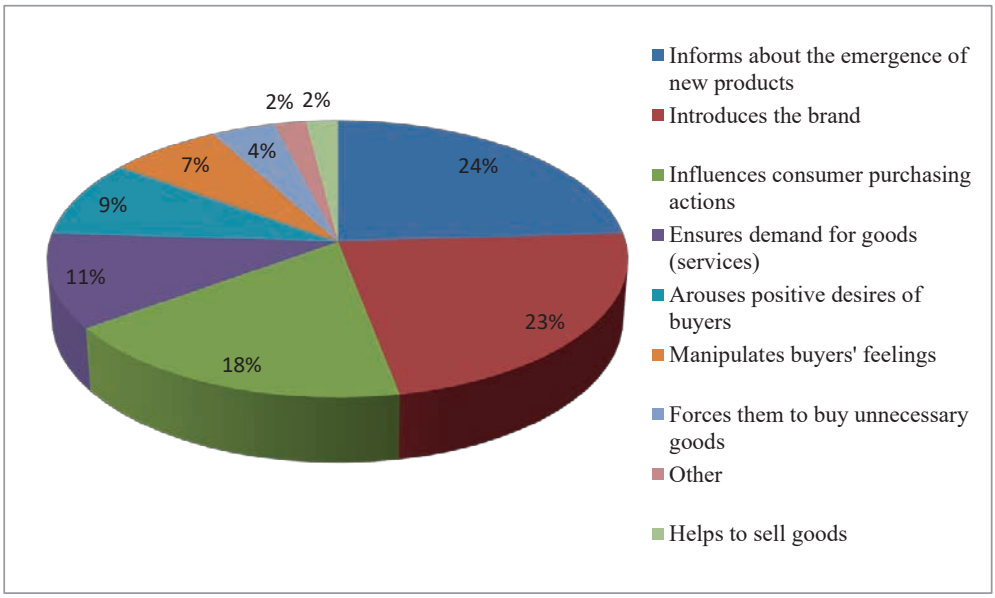


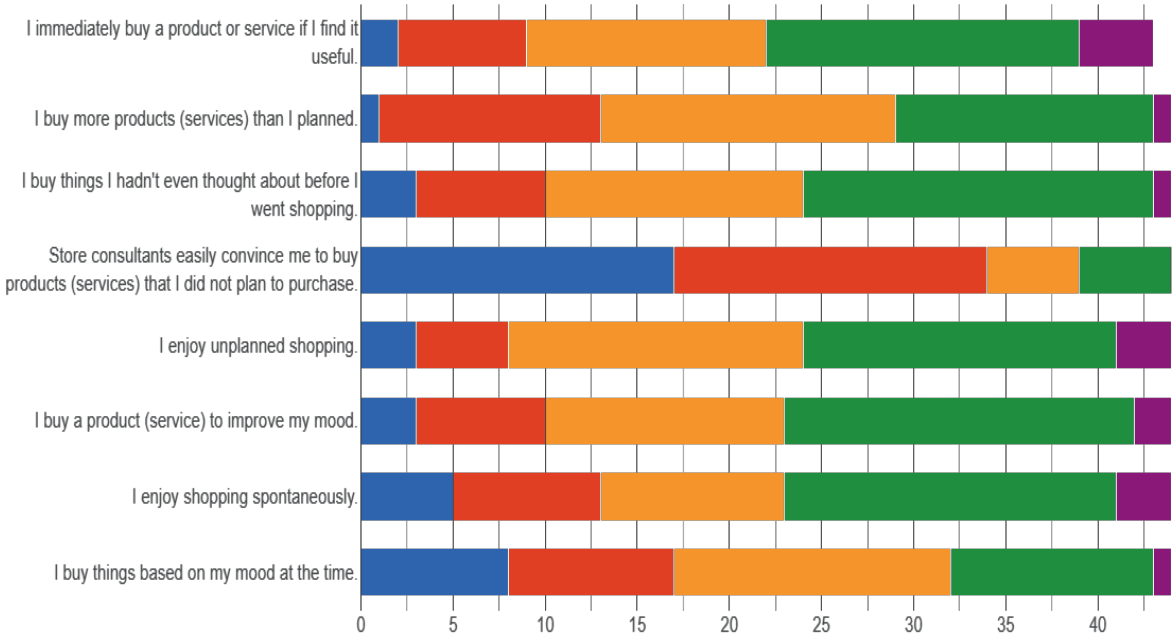
Figure 5. Why do we Need Advertising?

That consumers are unpredictable is confirmed by several further control questions. When respondents were asked whether advertising helps them choose and buy products (services), the vast majority again chose a positive answer (60%), but they do not think that advertising influences them (62%). And yet, only 16% of respondents answered that they believe in advertising, and as many as 40% of them do not know whether to believe it or not. Such controversial answers to similar questions only confirm the statements of scientific literature about consumers' perception that they

provide rational answers about their conscious actions related to product selection and purchase. But comparing the answers obtained, it is assumed that consumers do not even know themselves very well.

The fact that advertising communication works and the advertising factor was rejected, probably unjustifiably, is shown by the answers to the question in the survey questionnaire as to whether the respondents have bought products advertised by influencers. 44% of respondents answered positively. Consequently, almost half of them have purchased what was obviously advertised.

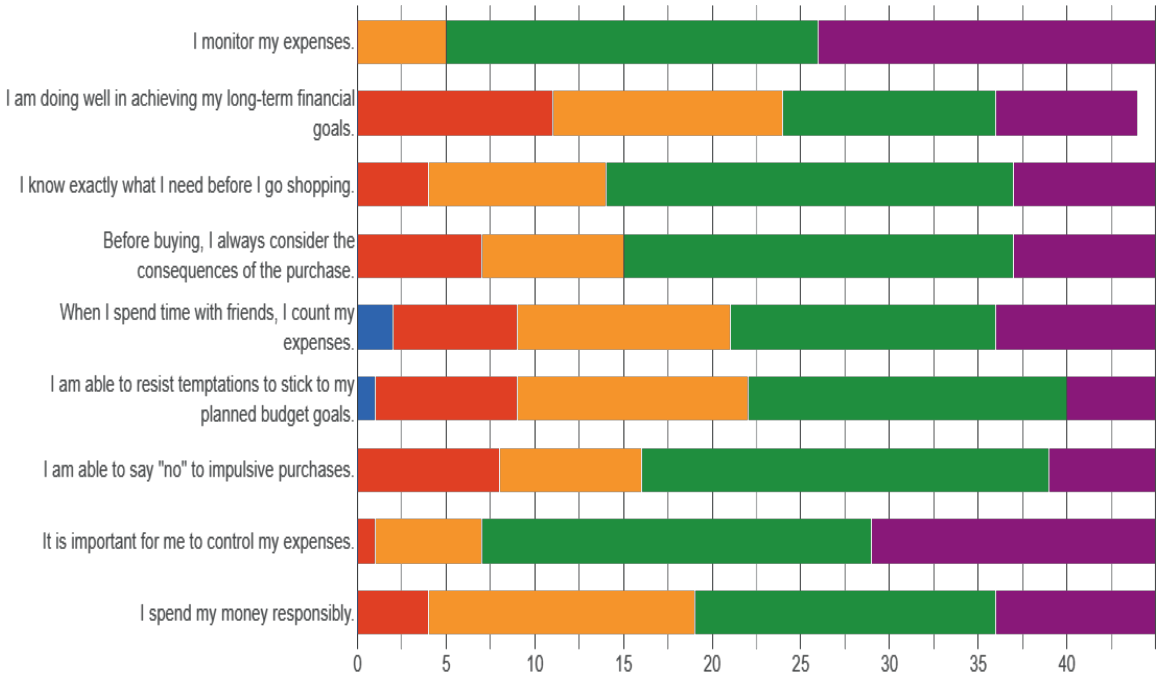
Although it was mentioned that only a very small part of the respondents shops spontaneously, another question revealed slightly different results. It showed that respondents like to shop spontaneously, it is fun for them, because out of the statements about the peculiarities of shopping, as many as 40.9 % agreed, and 6.8 % completely agreed with the mentioned factor. Even more respondents agreed with the statement that they are inclined to buy products to improve their mood (47.7%). It turns out that a significant part of the respondents is pleased with unplanned shopping (45.4%) and the purchase of unplanned items (45.5%). The greatest agreement was expressed by the respondents regarding the sudden (impulsive) purchase of a product if they thought the item was useful at the time (48.8%). The least agreement was received by the statement about the consultants convincing them to buy something that was not planned (11.4%) and, accordingly, the most disagreeing were with it (77.2%). The least disagreeing were about unplanned purchases (18.2%) and the purchase of unplanned items and to improve their mood (22.7% each). Also, many statements were evaluated with the answer option in part (Fig. 6.).



(*Colour meanings: blue – I completely disagree; red – I disagree; orange - I neither agree nor disagree; green – I agree; violet – I completely agree)*

Figure 6. Respondents' Shopping Habits

Despite the fact that respondents claim to like being spontaneous, buying items that are not always thought out, when asked about their spending, they hold the firm opinion that they monitor it (88.9%: 46.7% completely agree and 42.2% agree) and control it (84.5%: completely agree 48.9% and agree 35.6%), know their needs precisely (68.9%: completely agree 51.1% and agree 17.8%) and consider the consequences of purchases (66.7%: completely agree 48.9% and agree 17.8%) and are able to resist impulsive purchases (64.4%: completely agree 51.1% and agree 13.3%) (Fig. 7). Respondents completely disagreed with limiting spending when with friends (4.4%), and the ability to resist temptations to stick to their planned budget goals (2.2%). The fewest disagreeing respondents were regarding spending control, and there were no respondents who completely disagreed with the statement about monitoring spending. This leads to the conclusion that respondents are attentive to their income and possible expenses. Many try to manage rationally and not overspend, but, unfortunately, the question discussed earlier reveals that it is fun to behave freely when shopping, and to choose and purchase products impulsively and spontaneously.



(*Colour meanings: blue – I completely disagree; red – I disagree; orange - I neither agree nor disagree; green – I agree; violet – I completely agree)*

Figure 7. Respondents' Attitudes towards their Spending

These results are further supported by the respondents' answers to another question about whether they feel they have bought unnecessary things when they return home from shopping (Figure 8). The vast majority answered that this happens very rarely (58%), and 16% of respondents said rarely. Some say that they never buy unnecessary things (13%). And only a small part of respondents say that they often buy such things (11%) or very often (2%). Therefore, the respondents' answers regarding cost control seem to be closely related to the respondents' firm determination to buy as few unnecessary things as possible in shopping malls. But it is likely that they would enjoy it if they could bother themselves less often and could afford to shop more spontaneously and impulsively (cf. Fig. 6).

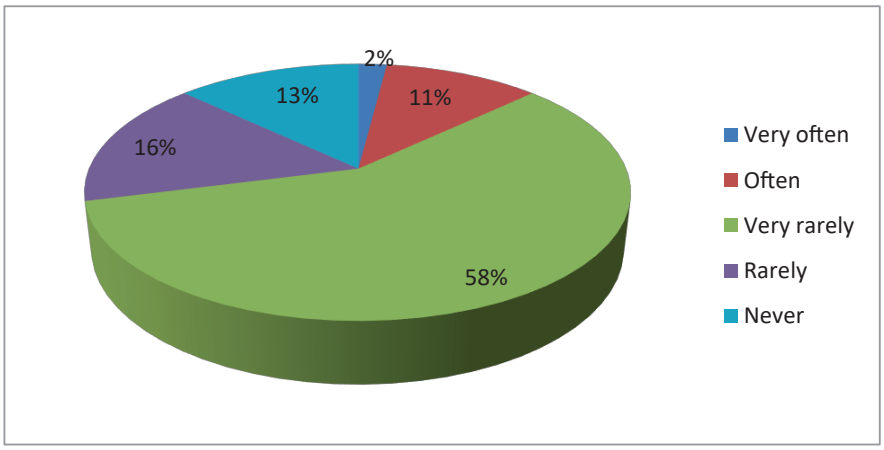


Figure 8. Do you Feel You've Bought Unnecessary Things after you Return from Shopping?

It is also worth mentioning the question – does it happen that you are overwhelmed by emotions when shopping and you buy what pleases you at that moment – again, conflicting answers were given compared to the responses received. Even 65% of respondents say that they buy driven by emotions, moreover, they go shopping even to be overwhelmed by negative emotions (60%). The effectiveness of shopping is evidenced by the responses given by respondents: many buy nothing (38%), even 31% of respondents said they buy something to lift their mood. Even 24% do not buy what they needed in the store, and ultimately 7% of respondents said they buy unnecessary items. This shows that bad moods when shopping can only be a reason to go if shopping really cannot be avoided. In all other cases, it is best to wait until the mood improves at least a little – then additional unwanted expenses can be avoided and generally buy what is needed (Fig. 9).

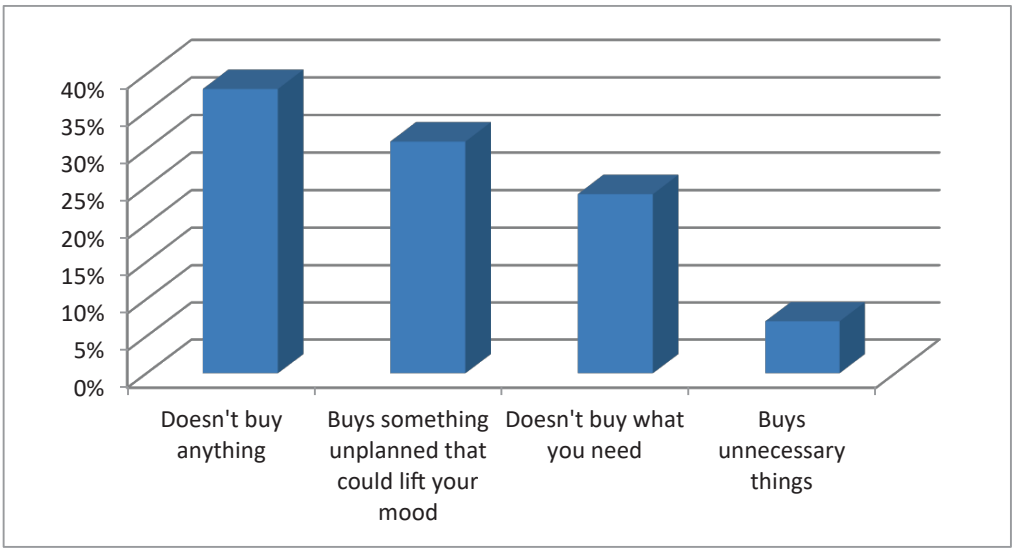
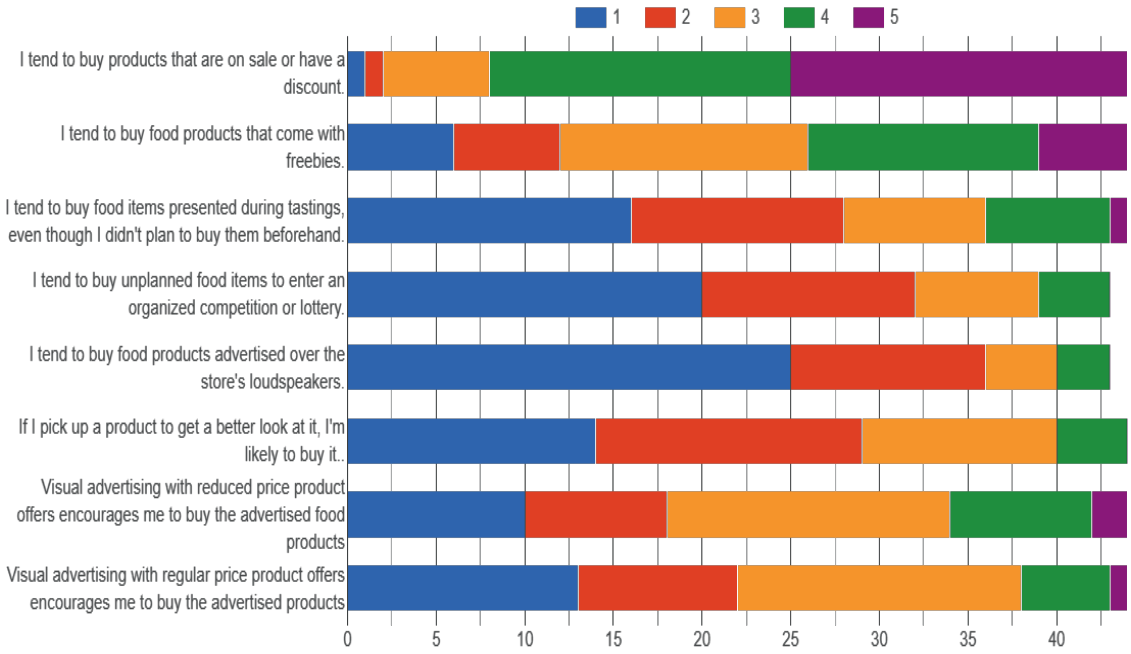


Figure 9. Respondents' Shopping Behaviour when in a Bad Mood

Returning to the rarely chosen discount factor by respondents, it can be observed in another survey question that the answers are still contradictory to the previous ones. Respondents were asked to express their agreement/disagreement with certain statements by marking from 1 to 5, where 1 means complete disagreement and 5 means complete agreement (Fig. 10). As many as 43.2% of respondents completely agreed with the statement that they tend to buy products with discounts, 38.6% agreed with this statement, and only 4.6% completely disagreed and disagreed, while 13.6% partially agreed. Thus, the offered discounts have an impact on consumer purchasing decisions, although it may initially seem otherwise. The least appealing to respondents are advertising announcements made through speakers in shopping centres, with 58.1% stating that they completely disagree with this promotional measure as an effective factor. They were completely sceptical about game or lottery (46.5%), tasting (36.4%) promotional factors, and denied that a product just picked up could become a potential purchase (31.8%). When evaluating the visual advertising factor with a discount and with a regular price, the choices were almost evenly distributed. Slightly more disagreed about the visual advertising appeal when the price is regular (29.5%) than when the visual advertisement is with a reduced-price offer (22.7%). The proportion of those partially agreeing with both promotional measures was the same (36.4%). Of course, the promotional measure of visual advertising with a discount received more favour: overall, 22.7% agreed with this factor. Thus, the most valued promotional measure is discounts, much less appreciated are small gifts given with a purchase, and advertising heard through speakers in the shopping centre is evaluated least positively.



(*Colour meanings: blue – I completely disagree; red – I disagree; orange - I neither agree nor disagree; green – I agree; violet – I completely agree)*

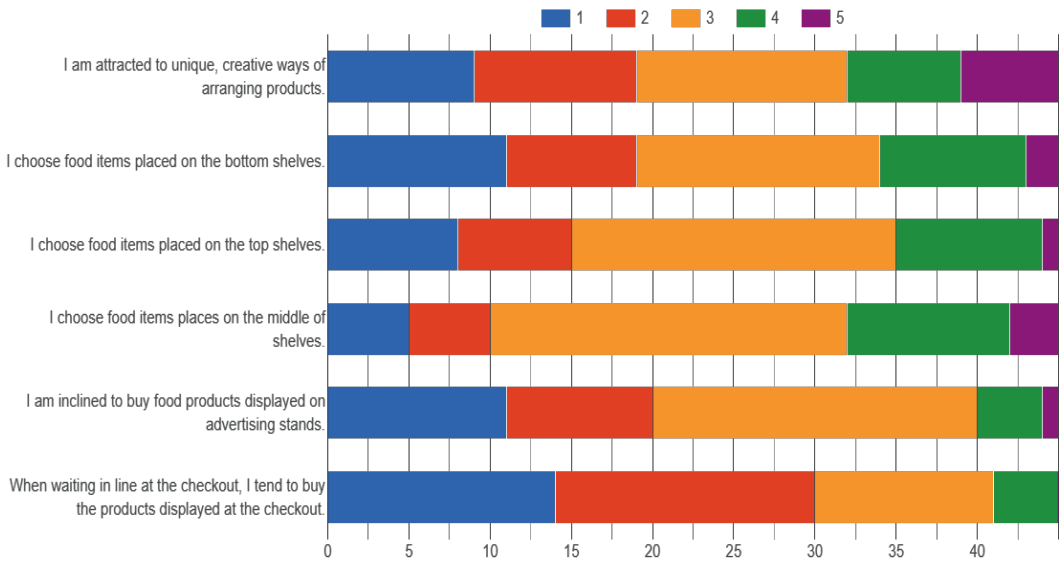
Figure 10. The Impact of Promotional Measures on Purchases

Discounts are not forgotten when answering the question about actions before going shopping (Fig. 11). As many as 44% of respondents review discounts and promotions, which means this aspect is not random or unimpressive during shopping. 36% of respondents behave more rationally, stating that they make a shopping list. 20% of respondents act unplanned and impulsively, of which 18% decide on purchases upon arriving at the store and 2% shop spontaneously.



Figure 11. Respondents' Actions before going Shopping

When assessing consumers' attention to products they intend to buy in retail locations, respondents were asked to rate their agreement with certain statements about the placement of food products in stores on a scale of 1 to 5. This question aims to determine where respondents focus their attention most when shopping. Of the statements provided, the majority of respondents indicated that they strongly agreed with attention-grabbing creative product placement methods (27.3%) compared to the other statements, but at the same time, this statement received significantly more dissenting opinions regarding this factor (43.2%). The same number of respondents agreed that they tend to choose products on the middle shelves of retail locations (27.3%), but similarly, the fewest disagreed with this statement (22.8%). The fewest respondents agreed with the statement that they tend to buy products while waiting in line to pay for goods (9.1%), but there were a great many who disagreed with this statement (65.9%). Overall, the statements in this question were mostly rated on average - there was a sufficient abundance of respondents who partially agreed when evaluating all the statements provided (Fig. 12).

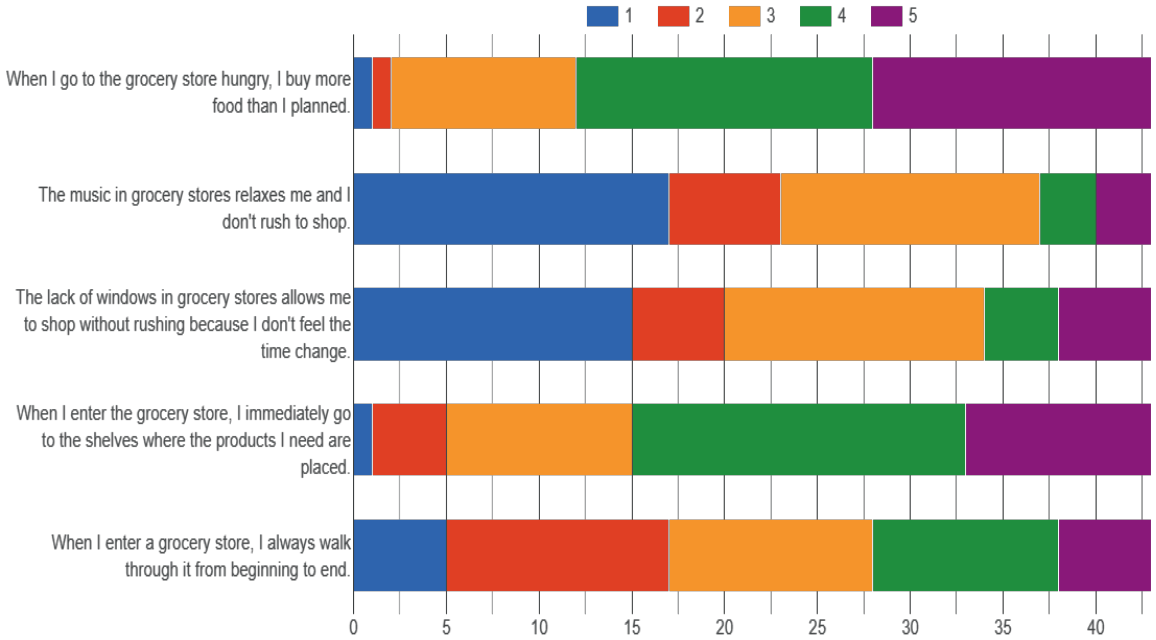


(*Colour meanings: blue – I completely disagree; red – I disagree; orange - I neither agree nor disagree; green – I agree; violet – I completely agree)*

Figure 12. Factors in the Display of Food Products in a Store that Attract Consumers' Attention.

When evaluating the stimuli that influence consumer purchasing decisions, respondents were asked about certain factors (hunger, music, light, product positioning in stores) that can impact their shopping characteristics. Most respondents agree with the statement that when they go to a grocery store hungry, they buy more food than planned (34.9%

completely agree and 37.2% agree), and only 4.6% disagree with this statement. Most disagree with the statement that music playing in stores relaxes and therefore consumers do not rush shopping (39.5% completely disagree and 14% disagree). This again confirms the idea expressed in the scientific literature that consumers are least consciously aware of the impact of music, although studies have shown that consumer behaviour and purchasing decisions are influenced by the music, melody, background, or certain sounds associated with the product. Respondents also tend to disagree with the statement that windowless stores, when there is no natural light, have an impact on the time of purchase: 34.9% completely disagree and 11.6% disagree. Only 20.9% agreed with this statement, and only 14% agreed with the influence of music. Respondents probably misunderstood the influence of product positioning, which is why they say that when they enter the store, they immediately head towards the aisles where the products they need are placed (23.3% completely agree with this statement and 41.9% agree, and only 2.3% completely disagree). 34.9% of respondents are inclined to walk around the entire store from start to finish, while 11.6% of respondents disagree (Fig. 13).



(*Colour meanings: blue – I completely disagree; red – I disagree; orange - I neither agree nor disagree; green – I agree; violet – I completely agree)*

Figure 13. Factors Influencing Respondents' Shopping Process

The factors influencing consumer behaviour are discussed, particularly focusing on the most attention-grabbing form of advertising (Fig. 13).

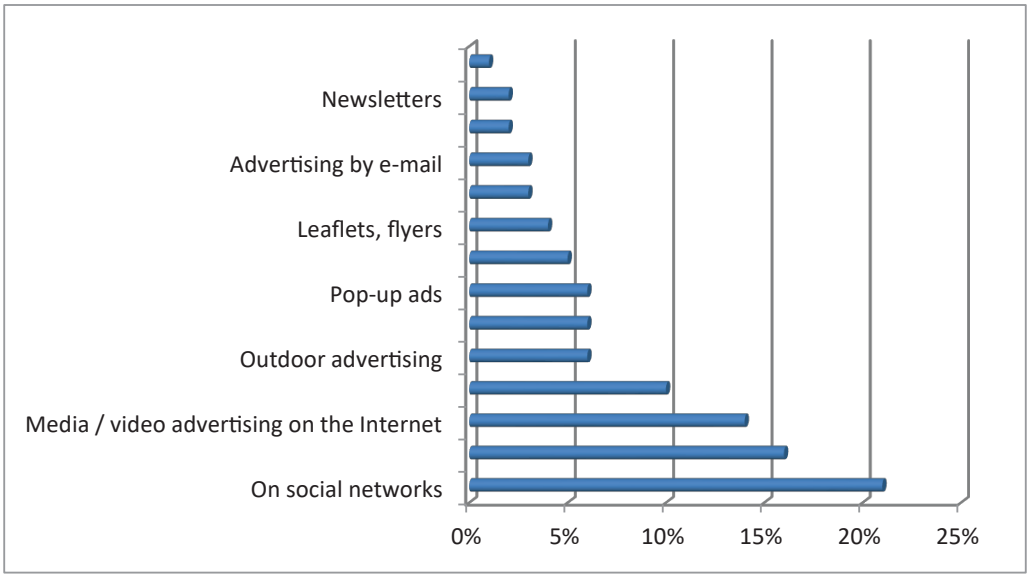


Figure 14. The Most Attention-grabbing Types of Advertising

The responses clearly reflect current realities, as respondents most often mentioned advertising on social networks (23%). A fairly strong position is maintained by TV advertising (16%), although it has been forecasted to decline for many years, but in this survey, it holds second position among the most attention-grabbing ads. It competes with online video advertisements (14%) and influencers (10%). All other types of advertising, according to respondents, are less effective, receiving between 6% and 1% of the votes. Interestingly, despite the increasing popularity and common occurrence of pop-up advertisements, respondents do not find them particularly attention-grabbing. Also not valued are newsletters, which are currently very popular, especially for developing small businesses.

From the main persuasive elements of the advertisement, respondents most often chose an attractive image (60%) – this confirms the classical statement widespread in scientific literature that the image is the most noticeable and impactful for the consumer (Figure 15). And conversely – the complete non-evaluation of the sound advertising environment (2 %) – as mentioned earlier, scientific studies have proven and confirmed this. Consumers do not notice and do not evaluate the music, sounds, background, etc. that are playing in the advertisement. Even the illusion of scents in the advertisement was noticed more by respondents (7%). In this case, it is referred to as an illusion, as it is a difficult task to convey a scent in an advertisement. You can only see how someone else experiences the aroma of the scent, so you just have to identify with it and imagine that scent. However, in the marketing of trade itself, scent is a very important element and is used very widely. The impression of touch in advertisements was not chosen by any of the respondents. This is perhaps the least researched area of the senses, which is not easy to transmit, yet respondents, apparently, simply do not consciously record that sensation. It simply remains a visual part of the advertisement.

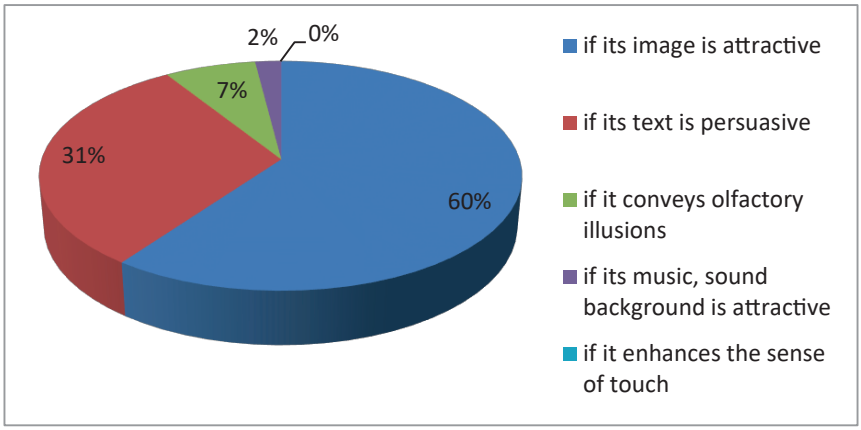
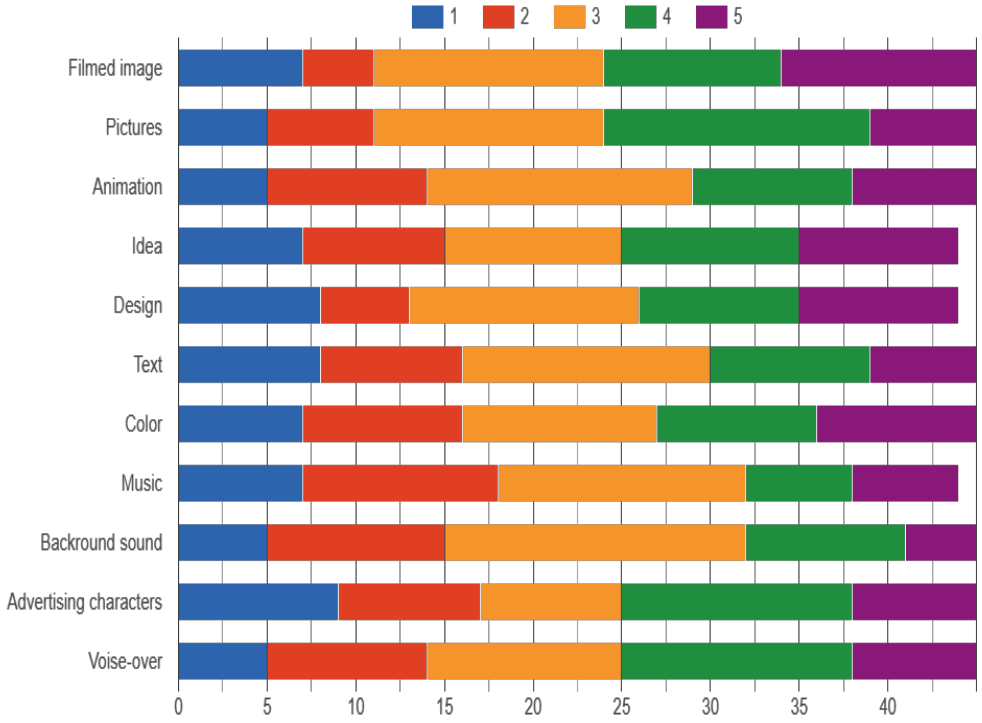


Figure 15. Advertising is More Persuasive

To persuade, it is important for advertising specialists to choose appropriate advertising elements that have the greatest impact, attract and retain the consumer's attention, etc. Therefore, respondents were asked which advertising elements attract their attention the most. Among the presented advertising elements, respondents most often identified advertising characters (20%), design (18.2%), and text (17.8%) as the most attention-grabbing. However, it is most surprising that music (25%), sound background (22.2%), and voice-over (20%) – audio advertising elements that were not mentioned as important in previous questions – are among those that attract slightly less attention. Also, animation and colour (20% each), idea (18.2%), text and advertising characters (17.8% each) are not far behind. By the way, it is interesting that filmed images (24.4%) ended up among the least attention-grabbing, because theoretically, a changing image should be one of the main attention-grabbing elements. Also, among the least attention-grabbing elements are idea, design, and colour (20% each), and the least frequently mentioned elements that do not attract attention are music (8.96%), music (13.6%), photos and text (13.3% each) (Figure 16). As can be seen, the same element can be perfectly evaluated on a certain scale compared to others, but if we were to evaluate only the attractiveness of the element itself, we would notice that many elements were evaluated as moderately attention-grabbing, in other words, respondents share their attention to all elements. Only some are singled out as very attention-grabbing or not attention-grabbing at all. This shows how important the complexity of advertising is, focusing on many factors, not just one.



(*Colour meanings: blue – very attention-grabbing; red – attracts attention; orange - neither attracting attention nor not attracting attention; green – does not attract attention; violet – completely unattractive)*

Figure16. Advertising Features that Attract the Most Attention

Concluding the discussion of the study, it's noteworthy that 78% of respondents believe that they make rational decisions during shopping. This supports theoretical assumptions that consumers believe their decisions are thoughtful, evaluated, and rational. Although the results of other responses show that their behaviour is influenced by certain factors, for example, they choose products from known brands, select products from middle shelves, stand in line at the checkout, and so on. Therefore, modern advertising communication achieves its goal: it influences the consumer in such a way that they do not notice, but respond as the advertisement suggests. It is evident that certain elements of neuromarketing are also reflected in these results. It can be concluded that neuromarketing studies are successful; they complement traditional marketing research and allow for seeing new opportunities to influence consumer behaviour. It is important that consumers - although they lack personal insight - believe they behave rationally and make thoughtful decisions.

Conclusions

Consumer behaviour is a complex and dynamic process that includes both rational and emotional, as well as subconscious, aspects of decision-making. Classical decision-making models define a sequential purchasing decision process: need recognition, information search, evaluation of alternatives, selection, and post-purchase behaviour. At each of these stages, the consumer is influenced by various internal (motivation, values, emotions) and external (social environment, culture, marketing communication) factors. However, modern studies show that in real consumer behaviour, this process is often non-linear, intuitive, and strongly linked to emotional and social influences. The decision to purchase is increasingly based on quick, emotional impulses formed by the intersection of advertising, environment, and personal experiences.

One of the key driving forces of behaviour is motivation – an internal need or stimulus that encourages the consumer to seek a certain value, solution, or experience. Consumer motivation is based on both biological (e.g., security, comfort) and psychological needs (recognition, identity, self-expression). Advertising often consciously appeals to these motivational sources – offering not only the product, but also emotional or social value. It is important to emphasize that consumers often make purchasing decisions based not only on information or price, but also on motivational and emotional impulses that act subconsciously. Therefore, motivation initiates behaviour and influences the course of choice – it can determine how much attention is paid to advertising content, which alternatives are evaluated, and how the product itself is interpreted.

Advertising communication is one of the most important marketing communication tools, with a significant impact on consumer behaviour. It operates both at the informational and emotional levels, encouraging consumer attention, engagement, recall, and ultimately the decision to purchase. Advertising, as a form of marketing communication, often

acts as the primary impulse that awakens consumer interest, provokes a need, or forms a perception of value even when such a need was not previously conscious. The structure of advertising content – image, text, sound, colours, symbolism, and emotional messages – interacts with the consumer's cognitive and sensory processes. Properly structured advertising communication can influence the consumer's attitude toward the brand, strengthen the emotional connection with the product, and encourage behaviour favourable to the seller. An important feature of advertising communication is its ability to create an emotional connection with the consumer. Emotions conveyed through advertising content (image, music, storytelling) can enhance brand recall, encourage trust, and even form loyalty. Studies show that advertisements that activate an emotional response not only last longer in memory, but also more effectively encourage action – purchasing, recommending, or showing interest. Moreover, consumers influenced by emotional advertising often decide more intuitively, evaluating alternatives less.

Neuromarketing is an interdisciplinary research field that combines knowledge and methods from neuroscience, psychology, and marketing. This field opens new opportunities to study subconscious and unconscious consumer reactions to advertising communication. Traditional research methods based on self-assessment often do not reflect true emotional or sensory responses, so neuromarketing technologies allow for a more accurate evaluation of consumer engagement, attention concentration, emotional experiences, and memory activation. The application of neuromarketing in advertising research enables the optimization of advertisement structure, the identification of the most effective communication elements, and a better understanding of how consumers process different advertising signals. Studies show that even a fraction-of-a-second emotional reaction can determine a subsequent purchase decision, making these technologies particularly significant for increasing advertising effectiveness.

The conducted empirical study, based on a quantitative anonymous questionnaire survey, revealed consumers' attitudes toward the influence of advertising communication on their behaviour and decision-making. The study involved 359 respondents representing various age and income groups, with data collected on digital platforms, ensuring respondent anonymity and representativeness. The study results showed a certain dissonance between consumers' perceptions and their actual behaviour: most respondents claim that advertising has no influence on their decisions, but the same study's data showed that as many as 44% have purchased products advertised by influencers, and nearly half (45–48%) are inclined to buy spontaneously or due to emotional factors. It was observed that although only 4% stated that advertising 'forces' them to purchase a product, as many as 60% indicated that it helps them choose or buy, and 62% do not believe that advertising affects them. This reveals a phenomenon often discussed in scientific literature – the unawareness of conscious and subconscious advertising influence. This insight aligns with neuromarketing study conclusions, indicating that advertising influence often manifests subconsciously through emotional and sensory channels, subtly shaping choices. The study also showed that visual advertising elements (e.g., attractive visuals) have the greatest impact on respondents' attention (60%), while auditory and musical aspects remain almost unnoticed (2%), although literature emphasizes that they can have a subconscious effect. This demonstrates a discrepancy between subjective consumer assessments and objectively recorded behaviour patterns. The study confirms that advertising communication has a multi-layered impact on consumer behaviour, often expressed through emotional, impulsive, and subconscious decisions. Although consumers often declare rational behaviour, their responses show that advertising remains an important factor in shaping behaviour, especially in digital environments where visual and interactive advertising formats intensively operate. The study results justify the need for businesses to invest in targeted, personalized, and emotion-based advertising content, and to encourage further mixed-method studies that combine consumer self-assessments with neuromarketing technologies.

Considering that which has been reviewed and studied, it is suggested that in the future more attention should be paid to research on personalized advertisements broadcast on new social media channels, in order to better explain the inconsistency of consumer behaviour between declared and actual choices. In addition, it is increasingly necessary to include neuromarketing elements in research that help to better understand consumers. Attention should also be paid to the synthesis of text, video and audio in advertisements and its possible impact on the consumer emotions that influence decision-making. Such research could contribute to a deeper understanding of the links between advertising communication and consumer behaviour, and establish the prerequisites for creating more effective, more meaningful advertising strategies directed at consumers.

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2.3. DISCOURSE OF ECONOMIC SECURITY: DOMINANT NARRATIVES IN CONTEMPORARY MEDIA

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Abstract. *This monograph examines the discursive construction of economic security in Lithuanian media between 2020 and 2024, highlighting thematic, emotional, semantic, and visual narratives that shape public understanding of economic threats, stability, and resilience. The study draws on the theoretical framework of Critical Discourse Analysis (CDA), including M. Foucault's power/knowledge paradigm, N. Fairclough's view of discourse as social practice, R. Wodak's discourse-historical approach, T.A. van Dijk's socio-cognitive model, and the poststructuralist theory of hegemony by E. Laclau and Ch. Mouffe. These approaches enable an analysis of how the concept of economic security is constructed in the public sphere through media, and what ideological functions are performed by dominant narratives. The research focuses on both public (LRT) and commercial (Delfi, 15min) media outlets. Using qualitative content and discourse analysis methods, more than 100 articles were analysed, identifying key discursive fields such as inflation, energy security, support for Ukraine, migration, and domestic political stability. The findings reveal that economic security is not portrayed as a neutral or technical indicator; rather, it acquires normative and ideological content shaped not only by expert reasoning but also by emotional metaphors, visual devices, and narrative patterns. Results indicate that media not only inform the public about economic processes but also actively interpret them, influencing citizens' perception of security, social attitudes, and political choices. The economic security discourse in the media functions as a powerful structuring tool of public communication, shaping not only awareness, but also collective interpretations of threats. It operates through metaphors, frames, and emotional cues that reinforce both cognitive and affective responses to economic phenomena. Framing strategies - such as threat narratives, individual responsibility, and state paternalism - determine how society perceives risks, evaluates institutional actions, and chooses behavioural strategies. Economic security in public discourse is both an objective condition and a discursively constructed concept that transforms structural challenges into moral, ideological, and emotional evaluations. Thus, discourse becomes a mechanism for behavioural norms and collective identity formation, exerting long-term influence on democratic decision-making and security policies. This monograph contributes to a deeper understanding of how economic security is shaped not only through policy documents or macroeconomic indicators, but also through discursive practices produced and circulated by media. The study is relevant to public policy researchers and communication specialists interested in the intersections of security, media, and ideology.*

Keywords: *economic security, discourse analysis, media, emotional narratives, public communication, ideology*

Introduction

In today's world, economic security is becoming an increasingly important subject of analysis, both in academic circles and political discourse. According to Jean-Paul and Martine (2018) and Rose (2017), this concept extends beyond mere financial stability or macroeconomic indicators. It has evolved into a complex, multidimensional notion encompassing national policy directions, as well as the emotional and social security of citizens. Scholars emphasize (Bajc & De Lint, 2011; Gomułka, 2023) that the foundation of economic security lies not only in objective data, but also in citizens' subjective trust in the future, the competence of the state, the reliability of systems, and the transparency of public communication.

Processes of globalization, increasing dependency on international markets, and geopolitical crises (such as the war between Russia and Ukraine) are radically reshaping the notion of economic security in Eastern Europe (Gomułka, 2023; Baldaro & Constantini, 2021). Traditional models of security, grounded in stability and growth, have become insufficient in addressing challenges such as energy vulnerability, inflation spikes, economic consequences of climate change, technological fragility, or the financial sector's dependence on external factors. These issues exacerbate public anxiety and give rise to new threat visualizations in media representations (Hase & Engelke, 2022; Ausat, 2023). These representations are often articulated through symbolic narratives in the media "the threat of inflation," "the energy crisis," or "pressure from global markets" which function not only as informational messages but also as mechanisms for generating emotional (in)security.

As Bajc and De Lint (2011) note, contemporary understandings of security can no longer be separated from everyday experience, economic security becomes a part of daily life, linked to job security, access to housing, price predictability of essential services, and the ability to live with dignity. Meanwhile, Nugaraitė (2015) emphasizes the role of public governance in communicating, anticipating, engaging with, and responding to crises. Thus, today's discourse on economic security encompasses not only economic indicators but also institutional trust, media-generated narratives, social solidarity, and the ability to critically evaluate risk communication. Economic security, then, emerges not only as a challenge for the state, but also as a mirror for society reflecting its value orientations, collective memory, and responses to uncertainty.

Pagett (2022) highlights the growing strategic narrative of "resilient societies," aimed at neutralizing both external and internal threats to economic security. This resilience paradigm becomes not only a security policy, but also a communication policy requiring institutions to react to crises, communicate decisions transparently, strengthen social capital, and restore public trust. Here, resilience is understood not only as infrastructural or systemic stability, but also as the society's ability to reach consensus, unite, and act in solidarity under pressure.

Within this framework, Lithuania serves as a significant case study, as media discourse intertwines with transatlantic security paradigms especially in the wake of the 2014 and 2022 events in Ukraine. In Lithuania, both security policy and public debate have acquired a geopolitical tone: economic topics are increasingly discussed in the context of risk, vulnerability, resilience, and hybrid threats. These narrative transformations directly influence the way citizens perceive economic security.

The media, as a producer of social power, both reflect and actively construct imaginaries of economic security (Hase & Engelke, 2022). The media function as systems of threat interpretation, shaping what is defined as a "problem," a "threat," or a "solution." Journalistic interpretations, headline choices, source selection, and the emotional tone of narratives often serve as the primary information sources for the general public, as such their influence on social reality is profound (Nugaraitė, 2015; Matonytė et al., 2024). The media construct a symbolic landscape of economic security, dominated by visualized fears: from energy blackmail to the threat of bankruptcy. This can distort collective emotions, generate economic pessimism, a sense of "psychological crisis," or even intensify political cynicism. As research by Hase and Engelke (2022) and Larsen and Roslyng (2025) shows, contemporary media do not merely transmit objective *information*, they generate *meaning* through framing strategies, recurring symbols, and emotional metaphors.

To analyse Lithuania's media landscape, it is appropriate to employ both traditional quantitative content analysis and in-depth qualitative discourse analysis. Here, discourse is understood not only as linguistic expression, but also as socially organized meaning-making that shapes, rather than merely reflects, reality. Discourse analysis enables the identification of how specific narratives such as "economic crisis," "energy security," "inflation threat," and "declining trust" transform the public sphere, political atmosphere, and shape the emotional climate of society.

Discourse analysis methods allow for the deconstruction of these processes: identifying dominant semantic fields, emotional emphases, ideological tropes, and narrative structures through which the media construct the relationship between "problem" and "solution." This is particularly relevant in the context of crisis communication, where representations of mass concern can have long-term impacts on political attitudes or even electoral outcomes. Social trust during crises is closely tied to public communication (Hase & Engelke, 2022; Padilla, França & Melella, 2024; Vidra & Messing, 2025), which becomes a strategic tool not only for informing but also for restoring emotional stability, reducing anxiety, and fostering civic cohesion. Ambiguous or contradictory communication can undermine institutional image and the legitimacy of the democratic system itself.

In Lithuania, this issue becomes especially pertinent when media narratives intersect with geopolitical discourse and hybrid security topics. Issues such as inflation, energy, the migrant crisis, and support for Ukraine often acquire not only economic, but also moral, identity-based, and value-laden dimensions. In this light, discourse analysis allows us to "read" the public sphere, decode its structures, power dynamics, and ideological tensions.

Facing both local and external crises, Lithuanian society is increasingly exposed to signals of economic insecurity: inflation, energy price spikes, narratives of social injustice, and an unstable labour market. This echoes Rose's (2017) argument that economic security is not only a matter of state capacity, but also of citizens' everyday existence. At the same time, the public sphere, especially the media, becomes the main platform where economic facts are assessed and symbolic meanings are constructed: what citizens perceive as "threat," "stability," "crisis," or "resilience" (Wodak, 2009).

It is therefore *essential to study* the content of economic security and how it is represented and articulated in media discourse, what narratives are constructed by Lithuanian media, and how they influence collective societal perception. Media-generated representations during times of crisis become central sources of collective emotions and reactions (Roslyng, 2025; Zou, 2025), which is particularly important in a democratic society where citizens' trust in public institutions, their political choices, and social stability partly depend on the realities shaped by the information environment (Vidra & Messing, 2025). Thus, the analysis of economic security in public discourse becomes not only an

academic task but also a strategic societal imperative (Ausat, 2023), enabling a deeper understanding of modern threats and society's resilience potential.

The object of investigation in this monograph is the discourse of economic security in Lithuanian media.

The aim of this monograph is to analyse the narratives of economic security as constructed in contemporary Lithuanian media, uncovering their semantic structure and assessing their impact on public perceptions of threats, institutional trust, and societal stability.

The specific objectives of the monograph are:

- To analyse theoretical approaches to the concept of economic security, distinguishing between various scholarly traditions (liberal, neorealist, critical, ecological, etc.), relevant evaluation criteria, and the role of economic security in national policy.
- To develop a theoretical foundation for media power and discourse analysis methodology, drawing on the principles of Foucault, Fairclough, and critical analysis, and to define the role of the media as a producer of ideology along with the application of selected methods in empirical analysis.
- To conduct a content and discourse analysis of economic security narratives in Lithuanian media from 2020 to 2024, identifying thematic, emotional, semantic, and visual narrative types and their distribution across public and commercial media platforms.
- To assess the impact of the economic security discourse on the content of public communication and the formation of societal perceptions of security.

Research methodology. The methodological framework is based on a combination of three approaches: qualitative content analysis, critical discourse analysis, and comparative media narrative analysis. This synthesis of methods allows not only for the identification of the most frequently articulated aspects of economic security in the media, but also for uncovering their semantic and emotional effects on the collective perception of security.

The study begins with qualitative content analysis aimed at systematically identifying recurring thematic elements related to economic security. This is grounded in Krippendorff's (2018) principle that "content analysis enables the identification of structural meaning patterns in texts without losing contextual integrity." This facilitates the development of a typology of narratives linked to symbolic representations of economic insecurity (e.g., inflation, energy, war, recession). Critical discourse analysis, as emphasized by Fairclough (2013) and Wodak (2009), provides tools to examine how language shapes social reality and may act as a vehicle for ideological structures. This analysis explores not only what is said but also how it is said: which metaphors, semantic structures, and rhetorical frames dominate in media reporting. The methodology of this monograph takes an interdisciplinary approach that allows for measuring the content of public discourse while also understanding its constructive power, its ability to shape collective attitudes, emotional responses, and indirectly influence civic behaviour and public policy directions.

Empirical data for the study was collected through targeted document selection, covering the online platforms of Lithuania's national and commercial media: LRT.lt, Delfi.lt, and 15min.lt. The analysed publication period spans from 2020 to 2024, enabling the examination of narrative shifts in economic security before, during, and after key crises such as the COVID-19 pandemic, the Russian invasion of Ukraine (2022), and ongoing energy and inflation-related tensions.

Documents were selected using keywords and phrases such as: "economic security," "energy threat," "inflation," "economic crisis," "price spike," "Lithuanian economy," "resilience," etc. Article selection was carried out in two stages: (1) automated search and filtering (via site-internal search tools or Google site search), and (2) manual qualitative selection, focusing on texts that prominently articulate economic insecurity themes, emotional expressions, rhetorical frames, and ideological markers. The final corpus consisted of approximately 112 articles, proportionally selected from all three media sources.

The study focuses on qualitative analysis; therefore, the key criterion for article selection was not quantity but content quality, semantic density, narrative structure, ideological weight, and emotional tone.

The theoretical contribution of this monograph lies in its advancement of an interdisciplinary conceptualization of economic security, bridging approaches from political economy, security studies, media analysis, and discourse theory. The research expands the classical concept of economic security extending it beyond macroeconomic indicators to include narrative and communicative dimensions, which have so far received limited academic attention in Lithuania.

Based on critical discourse theory (Fairclough, 2013; Wodak, 2009), this study reveals how narratives of economic insecurity in the media not only convey information, but also actively construct social reality, emotions, and political attitudes. In this way, the work contributes to the development of media power analysis in the Lithuanian context. Moreover, the monograph adds to regional security studies by presenting Lithuania as a case through which to examine how economic security discourses reflect transnational threats (e.g., Russian influence, energy blackmail, inflation waves)

and how they are localized in specific media practices. Finally, the study affirms the theoretical premise that economic security is not merely an economic or political category, it is also a culturally constructed communicative reality that requires new research methods sensitive to language, meaning, and symbolic structures of power.

The practical relevance of the study emerges in several interrelated areas. First, the analysis enables the identification and naming of the dominant economic security narratives in Lithuanian media. This is valuable to academics, journalists, communication strategists, and media editors seeking to understand how their content shape's public opinion about economic conditions, threats, and state policy. The research is also relevant to public policymakers who, based on these results, can better comprehend which aspects of economic insecurity (e.g., inflation, energy dependence, geopolitical risk) most strongly affect the emotional climate, institutional trust, and civic behaviour. These insights can be applied to crisis communication strategies, risk prevention, and enhancing the transparency of decision-making. The findings also contribute to media literacy and can be incorporated into educational contexts, civic education programmes, or NGO-led awareness campaigns, encouraging a more critical approach to economic narratives and their emotional impact.

Study limitations. The study's limitations relate to thematic, temporal, spatial, and source typology constraints. First, it examines the discourse of economic (in)security as publicly articulated meanings, not factual economic data or indicator shifts. Thus, the focus is on representations, linguistic models, and narratives through which the media convey concepts of threat, stability, or resilience. The research is limited to the period from 2020 to 2024, encompassing four significant socio-economic phases: the onset and progression of the COVID-19 pandemic, the beginning of the war in Ukraine, the wave of energy crises, and the period of inflation-related uncertainty. This timeframe was chosen for its informational intensity and crisis-marked nature, allowing for the analysis of economic security narratives under conditions of heightened risk.

Geographically, the study is confined to Lithuania's public information space. In terms of source typology, it focuses on three main information channels: LRT.lt (public), Delfi.lt, and 15min.lt (commercial media). The study excludes television broadcasts, social media, and comment sections, this was a deliberate decision to concentrate on professionally edited media content. Also excluded are user behaviour metrics, public opinion polling, and empirical impact measurements, the object of this study is media discourse structures, not their psychosocial or statistical effects.

Approaches to Economic Security

The Concept of Economic Security. The concept of economic security has undergone a significant transformation in recent decades. Initially, it was considered a secondary component of national security, dominated by macroeconomic variables - budget deficit, trade balance, GDP growth or inflation rate. However, the modern approach increasingly treats economic security as a multi-level and interdisciplinary concept, covering both the state and individual levels. Such an approach, according to Bilgin (2023), allows us to discuss not only the objective parameters of the economic system, but also the subjective sense of security of members of society.

Economic security is becoming a fundamental condition for the resilience of a modern state. It is defined not only as the capacity to avoid economic shocks, but also as the ability to quickly adapt to their consequences and ensure the continuity of the well-being of the population. Pisani-Ferry et al. (2024) points out that the paradigm of economic security must be revised in light of constantly changing global risk factors – energy crises, pandemics, military conflicts or climate challenges. Such changes show that traditional assessment models based solely on economic indicators are becoming insufficient.

Historically, economic security emerged as a branch of geopolitical economics, in which states sought to ensure the independence of their economic systems, control of resources, and resilience to external pressure. However, at the end of the 20th century, the concept of human security emerged, which integrated social, economic, and cultural aspects. According to this paradigm, security could no longer be defined solely by state power – it had to be measured by the parameters of the individual's quality of life (Lindstaedt, 2021). Scientific research highlights the importance of human security in the context of 21st-century challenges – from climate change to pandemics. According to Gasper (2005), human security helps to combine the goals of development, human rights, and security policy: "Human security is about the vital core of all human lives, in ways that enhance human freedoms and human fulfilment." Furthermore, Acharya (2001) suggests that human security is an effective instrument for regional conflict prevention, as it targets the most vulnerable groups and the structural causes of violence. Despite its broad applicability, the concept of human security has also been criticised for its conceptual vagueness. Paris (2001) notes that this concept is too broad to be of practical application in policymaking: "Human security is like sustainable development – everyone is for it, but few people have a clear idea of what it means." However, authors such as Owen (2004) emphasise that the flexibility of human security allows it to be applied in different regional and cultural contexts, which is its strength.

Andersen-Rodgers and Crawford (2022) emphasise that the change in the concept of security allows for the inclusion of aspects such as job stability, access to basic services, lifestyle continuity, and the ability to avoid poverty. In

this way, economic security becomes not only a structural issue, but also a matter of everyday life. It also includes an emotional component - even with good macroeconomic indicators, residents may feel insecure about the future, political instability, or changing prices.

After analyzing a number of scholarly works (Mishchuk, 2023; Kalyniuk, 2023; Gradoboev & Solskaya, 2022; Koba, 2021; Blakyta et al., 2021), a three-level economic security analysis is recommended: macro – the state's strategic independence and fiscal stability; meso – the resilience of individual sectors, especially energy and IT; micro – individual households, their financial situation and ability to withstand economic shocks. This structure allows us to assess economic security not only as a result of state policy, but also as a dimension of every person's life.

Table 1. Model of the Concept of Economic Security

Macro Level: State Economic Autonomy	**Meso Level: Sectoral Resilience**	**Micro Level: Individual and Household Security**
Assessment of national economic security	**Assessment of specific economic sectors' security**	**Assessment of individual citizens' or families' security**
MOST ATTENTION GIVEN TO:		
– Fiscal stability (budget deficit control, debt management) – Monetary policy (inflation control, currency stability) – Resource control (energy, food and natural resource self-sufficiency) – Economic diplomacy (reducing dependency on external suppliers or markets)	– Energy sector (import dependency, infrastructure vulnerability) – Information technologies (cybersecurity) – Healthcare (supply chains, medicine independence) – Agriculture and food production	– Personal or family income and its sustainability – Debt levels and savings opportunities – Ability to obtain essential goods and services (housing, healthcare, food) – Subjective sense of security (perceived threat of job loss, living standards) – Level of financial literacy

Source: compiled by the author

Koba (2021) argues that at the macro level, the most important thing is to ensure strategic independence – i.e., that the country can function even during a global crisis or supply chain disruptions. For example, the LNG terminal in Lithuania is considered a macro security solution that allows for reducing energy dependence on unfriendly sources. At the meso level, the resilience of individual sectors to crises is assessed – whether they can continue to operate in the face of challenges, whether they have alternative supply channels, or whether they depend on one country/region. For example, if IT infrastructure (servers, cloud computing) is dependent on foreign countries, this may become a risk to national security. The meso level also allows for the assessment of sectoral policies: whether they contribute to long-term sustainability, or whether they promote innovation and self-reliance. Even with stable macro indicators, economic security may be low at the micro level – for example, when households are unable to withstand unexpected expenses, are under debt pressure, or do not have social security. Therefore, the micro level becomes extremely important in assessing the issues of social inequality, exclusion and long-term poverty. Three-level analysis model allows combining different aspects of economic security into a single system, helping to form a holistic security policy in which both state sovereignty and the well-being of each citizen are equally important.

In Lithuania, the concept of economic security has expanded substantially since the 2008 global financial crisis, when it became clear that macroeconomic growth and budgetary discipline do not guarantee either public satisfaction or long-term trust in institutions. Crises have exposed structural weaknesses in social resilience, especially among the most vulnerable groups in society. The COVID-19 pandemic has further highlighted these challenges – supply chains have been disrupted, energy insecurity has increased, and communication of economic decisions has become a key factor in trust.

In 2022, the war launched by Russia in Ukraine again moved the issue of economic security to the forefront of the political agenda – this time in the forms of energy independence, strategic reserves, control of the information space and social stability. As Persaud (2022) notes, the feeling of economic security of society increasingly depends not on GDP growth, but on trust in institutions, price predictability and transparency of communication. This view is also confirmed by Matonytė, Gajauskaitė and Jasinavičius (2024), whose research shows that the economic insecurity experienced by young people is often associated not with actual income or the situation on the labour market, but with the uncertainty of information, uncertainty about the future and a crisis of public authority credibility.

In Lithuania, economic security is understood more and more broadly today as a complex system that includes not only financial stability, but also the maintenance of social trust, the quality of communication, the accountability of institutions and the ability of residents to navigate in information chaos. This allows us to talk about a new dimension of security–discursive economic security, in which the public narrative becomes no less important than real economic measures. It is important

to mention that the modern concept of economic security also includes an emotional component – even with good indicators, people may feel insecure. This means that economic security is not only an objective condition, but also the result of perception and trust. Education, as an institute of social sustainability, is one of the most important factors in the formation of long-term trust, and Kazlauskaitė-Markelienė and Petrauskaitė (2011) highlight the importance of solidarity and social awareness as the opposite of economic and political egocentrism. In this authors' view, the sustainability of economic security is impossible without cultural capital and a collective understanding that resilience is a community, not an individual project.

A study by Matonytė, Gajauskaitė, and Jasinavičius (2024) shows that perceptions of economic insecurity often stem from emotional reactions to uncertainty, especially among young people, where hybrid threats (e.g., price spikes, job instability, inflation narratives in the media) trigger a sense of loss of control. This confirms the need to combine both economic indicators and subjective experience research in the analysis of economic security.

Table 2. Comparison of Concepts of Economic Security

Author	Perspective	Concept of Economic Security	Key Focus Area
Smith, E. (2020)	Neorealism	Economic security is the state's ability to control strategic resources and protect markets from external threats.	Sovereignty, national interests, and resource geopolitics.
Bilgin, P. (2023)	Critical Theory	Economic security is a guarantee of human rights and dignity, grounded in social justice.	Social equality, reducing exclusion, and human rights.
Persaud, R. B. (2022)	Human Security Theory	Economic security is an individual's ability to live free from poverty, access basic services, and exercise economic choice.	Dignity, everyday security, and people-centred analysis.
Blakyta et al. (2021), Koba, O. (2021)	Complex Analysis	Economic security is a multi-level (macro, meso, micro) balance between strategic stability and individual well-being.	Sectoral responsibility, fiscal autonomy, household stability.
Kazlauskaitė-Markelienė, R. & Petrauskaitė, A. (2011)	Educational-Cultural	Economic security is inseparable from education and civic awareness – it depends on risk perception and responsible action.	Trust, education, critical thinking, and social resilience.

Source: compiled by the author

Concepts of economic security in various theoretical contexts reveal that it is not a homogeneous, "technical" concept - it depends on the analytical point of view, the chosen level (state or individual), and the political-cultural value system.

The five concepts of economic security presented in Table 2 recognise that economic security encompasses more than just financial stability. The concepts shift the focus of analysis: from the state (Smith) → sector ((Blakyta; Koba) → individual (Bilgin) → society (Kazlauskaitė-Markelienė and Petrauskaitė). The interpretation of the source of risk also varies for some, it is external threats, for others, social exclusion or cultural fragmentation. Thus, the need for an interdisciplinary assessment that would connect political science, sociology, economics and educationology becomes apparent.

Finally, economic security in the modern world is not only an objective outcome of politics or a set of economic indicators – it is also a product of social imagination, based on how individuals and communities perceive risks, threats and their options to act. As McDonald (2021) argues, security "is not just about protection from threat – it is also about giving meaning to uncertainty". In other words, people respond not so much to the risk itself, but to how it is named, interpreted and broadcast through the media or political discourse. In this way, economic security becomes a dynamic, constantly changing construction that operates in social space. Trust in institutions, emotional background, tone of information and symbolic power – all of these become both expressions of security and its shaper.

This constructivist perspective allows us to understand economic security as a constantly rewritten narrative that is sensitive to historical context, communication tools, and collective memory. For example, what was considered a security guarantee in one era (e.g., global trade) may be considered a threat in another (e.g., dependence on Chinese or Russian supply chains). In times of contemporary economic shocks (pandemics, inflationary shocks, wars), it becomes evident that economic security requires not only political action but also ongoing discursive management, empathy in communication, inter-institutional cooperation, and citizen empowerment. Therefore, an interdisciplinary assessment – encompassing economics, communication, cultural studies, and public policy – becomes a necessity. Economic security cannot be ensured by regulating the budget or laws alone; it must be understood, felt, and made meaningful in society as the result of shared responsibility.

Contemporary Threats to Economic Security. The modern landscape of economic security is characterized not only by its multidimensional nature, but also by a fundamentally transformed structure of threats. While in the late 20th century economic threats were primarily associated with financial crises and unemployment levels, the 21st-cen-

tury spectrum of risks has significantly expanded. It now includes geopolitical upheavals, technological dependencies, climate-related risks, energy insecurity, information crises, and even psychological uncertainty (Bilgin, 2023). Economic security threats are no longer limited to shifts in economic indicators or cash flows, they have become structural, long-term, and often difficult to predict. Energy dependency, inflation, climate change, and declining trust in institutions have all emerged as new dimensions of insecurity.

Energy vulnerability, particularly following Russia's 2022 aggression against Ukraine, has underscored the risks of dependence on a single supplier and prompted public debate about energy security as a foundation of economic security. Strojny et al. (2023) observe that "the shock effect of the energy crisis was felt not only in industry but also in households, threatening the availability of essential services." Inflation represents another major threat, affecting all levels of the economy but disproportionately impacting low-income populations. Koundouri and Dellis (2023) emphasize that inflation hits the most vulnerable the hardest, reducing their purchasing power and exacerbating social inequality.

Changes in the labour market driven by automation and the platform economy are reshaping employment structures and generating new forms of insecurity. Bilgin (2023) notes that while new forms of work are more flexible, they are also more fragmented. Workers often lack both social protections and stable incomes.

The COVID-19 pandemic revealed yet another domain of risk — the impact of health crises on the economy. According to Pisani-Ferry (2024), the pandemic exposed how even the strongest economies become vulnerable when supply chains break down, mobility declines, and trust in institutions deteriorates. This has broadened the concept of economic security to include societal resilience and adaptability.

Technological security has also become critical both in terms of infrastructure vulnerability to cyberattacks and dependence on third-party IT solutions. Bilgin (2023) argues that contemporary economic power is inseparable from control over data and digital sovereignty.

Climate change is likewise closely tied to economic security. McDonald (2021) states that climate instability is already disrupting logistical routes, reducing resource availability, and increasing infrastructure costs. Extreme events such as droughts and floods impact both production and distribution. The economic consequences of climate change, particularly concerning agriculture, water resources, energy, and migration, are evolving into systemic and long-term threats. Barry (2012) stresses that "economic security policy must be aligned with ecological sustainability principles, or it will ultimately become a destabilizing force itself."

Equally important is the issue of public trust. According to Fehér (2020), economic security crises often begin not with real losses, but with psychological insecurity — when individuals no longer believe in the effectiveness of systems. Information crises and manipulative communication whether spreading false threats or distorting reality undermine not only political stability, but also rational economic decision-making. Büyükbay (2025) notes that news dissemination in times of crisis becomes not merely a factual report but an act of shaping emotions, fear, and trust.



Figure 1. Contemporary Economic Security Threats: Typological Breakdown
Source: compiled by the author

Contemporary threats to economic security are marked by complexity and interdependence, necessitating an interdisciplinary and multifaceted approach to analysis. Researchers increasingly discuss the phenomena of "risk clustering" and "threat spillover," where vulnerabilities in one domain trigger destabilization in another (Mishchuk, 2023; Blakyta et al., 2021). Within this framework, six main categories of threats can be identified:

Geopolitical Tensions – including wars, sanctions regimes, and dependence on authoritarian energy suppliers – generate economic insecurity both directly and symbolically. Their effects include investment instability, external pressure on economies, and inflationary surges.

- *Energy Security* – understood as the reliable supply of physical resources, price predictability, and resistance to manipulation in supply chains.
- *Health Crises* – exemplified by the COVID-19 pandemic, which revealed how quickly a health emergency can escalate into economic collapse through disrupted supply chains, reduced consumption, and rising unemployment. Gereffi (2020) notes that "the pandemic became a litmus test for economic dependence on social infrastructure." As a result, health crises have become a structural source of risk within the economic security discourse.
- *Cybersecurity and Digital Infrastructure* – economic security in today's society is inseparable from the reliability of digital infrastructure. Cyberattacks targeting financial sectors, energy systems, or public services can have real economic consequences. Bilgin (2023) emphasizes that "data sovereignty has become a component of geopolitical power." Dependency on external digital service providers introduces structural vulnerabilities.
- *Long-term Environmental Threats* – including droughts, floods, agricultural yield reductions, and environmentally driven migration. Barry (2012) argues that "ecological unsustainability ultimately triggers economic imbalances that no longer align with free-market logic or social policy goals." Consequently, climate challenges are increasingly integrated into national security strategies.
- *Information Instability and Discursive Threats* – encompassing disinformation, manipulative narratives, and emotionally charged crisis rhetoric, which can provoke panic, obstruct rational decision-making, reduce trust in institutions, and trigger behavioural volatility (Büyükbay, 2025). Information instability constitutes an invisible yet effective form of threat that is particularly difficult to manage.

The spectrum of economic security threats is expanding and demands systematic, coordinated policy responses aimed at fostering resilience and social justice. Today, economic security can no longer be measured by budget deficits or GDP growth alone, since it encompasses an entire ecosystem of risks spanning the physical, social, technological, ecological, and informational spheres. Thorough analysis of these threats is essential not only for academic reflection, but also for shaping public policy and delineating media responsibility.

Indicators and Metrics of Economic Security. Measuring economic security remains one of the most complex challenges in both theoretical and practical political economy. Although economic security is often presented as an aspirational goal, its objective and standardized assessment remains problematic. The concept encompasses a wide range of economic, social, energy-related, and even psychological factors, making a single universal measurement tool elusive. This section reviews commonly used criteria for evaluating economic security, their advantages and limitations, and proposes alternative methods reflecting contemporary challenges.

Economic security analyses are typically based on indicators grouped into several categories (see Table 3):

Table 3. Indicators and Metrics of Economic Security

Indicator Group	Indicators
Macroeconomic	GDP per capita, inflation rate, unemployment rate, current account balance
Fiscal and Financial	Government debt-to-GDP ratio, foreign reserves, credit ratings
International Trade	Export/import ratio, FDI flows, supply chain dependence
Social	Poverty rate, Gini coefficient, access to healthcare, education levels
Energy and Environmental	Share of energy imports, use of renewable energy, CO_2 emissions per capita
Institutional	Corruption Perception Index (CPI), Rule of Law Index, Government Effectiveness, Political Stability and Violence Risk

Source: compiled by the author

The classical group of economic indicators associated with a nation's economic wellbeing includes GDP per capita, inflation levels, employment data, public debt, and the trade balance. While these reflect macroeconomic stability, they do not necessarily show whether citizens feel economically secure. As Pisani-Ferry et al. (2024) argue, evaluating economic security must go beyond GDP, it must consider income distribution and whether basic needs can be met. For example, Galor and Zeira (1993) demonstrate in their model that income inequality can have long-term negative effects on growth, especially when capital market imperfections restrict investment in human capital. Even with growing GDP, inequality may dampen overall economic security. Empirical studies show that income distribution directly affects people's ability to meet basic needs. For instance, research on child well-being highlights that family income is a critical factor in ensuring children's health, nutrition, and education (Brooks-Gunn & Duncan, 1997). This under-

scores that economic security evaluation should cover not only general economic growth but also its distribution across different social groups. Economic security assessments must also account for subjective perceptions. After all, economic security involves people's ability to consistently meet their needs, a function of not just actual income but its stability and predictability.

In scholarly literature, fiscal and financial indicators are considered core components of economic security, especially during crises. Researchers analyse both quantitative macro-level data (deficit, debt, reserves) and qualitative dimensions (policy stability, regulatory quality). The influential study by Reinhart and Rogoff (2010), analyzing centuries of sovereign debt dynamics, found that "when government debt exceeds 90% of GDP, long-term growth slows significantly and financial instability risks increase." Stiglitz et al. (2009) advocate for a broader evaluation of fiscal security, including the efficiency of public investment and the sustainability of policy frameworks. International trade indicators play a crucial role in evaluating national economic security. Trade openness, structure, and dependency on external flows can determine both growth potential and vulnerability to global crises. As Hausmann & Hidalgo (2011) point out, "high import dependence or limited export diversification increases countries' vulnerability to global shocks."

A more advanced method for assessing economic security is the use of socio-economic security indices, which integrate not only traditional macroeconomic metrics, but also social and quality-of-life indicators such as the Gini coefficient, poverty rate, access to education, housing conditions, and social protection coverage. These comprehensive tools provide a deeper understanding of how economic changes impact various segments of society, and how economic benefits are distributed. As Bilgin (2023) asserts, "only in societies where income distribution is not distorted and effective social safety nets exist, can we speak of sustainable economic security." This means that since GDP growth or inflation control alone are not enough, it is crucial to ensure that the gains of growth are distributed fairly and that mechanisms are in place to shield vulnerable groups from economic shocks.

An important metric in assessing economic security is *energy security*, which includes dependence on energy imports, price stability, and diversification. According to Strojny et al. (2023), energy security has become a cornerstone indicator of economic security both in terms of price stability and infrastructural control. For this reason, policymakers must give special attention to strengthening energy security by diversifying supply sources, modernizing infrastructure, and transitioning to sustainable energy sources.

Institutional strength and the quality of institutional functioning are also crucial elements for ensuring long-term economic security. Stable, effective, and transparent institutions enhance not only investment attractiveness but also public trust, the predictability of government actions, and resilience to crises. As noted by Acemoglu and Robinson (2012), countries with strong institutions tend to exhibit greater resistance to economic shocks, faster growth, and higher living standards. The Corruption Perceptions Index (CPI), compiled annually by Transparency International, measures perceived levels of public sector corruption. The Rule of Law Index is calculated based on the independence of the judiciary, enforcement effectiveness, and quality of legal proceedings. The Government Effectiveness Index evaluates the state's ability to formulate and implement policy, the quality of public services, and independence from political pressure. Corruption distorts budgetary spending, weakens trust in institutions, and undermines fiscal stability (Mauro, 1995). Rule of law ensures a stable environment for business, protection from arbitrary state interference, and the safeguarding of property rights (La Porta et al., 1999). Countries with low political instability are more attractive to investors and less susceptible to domestic crises. International organizations such as the World Bank, OECD, and UNDP use institutional indicators as key components in assessing national security and sustainable development.

Economic security is the state's ability to ensure stable and sustainable economic development by safeguarding vital resources, strategic sectors, and by pre-empting potential economic threats. This is a multidimensional phenomenon, and its assessment requires complex methodologies. One of the most commonly used approaches is indicator analysis. Since the COVID-19 pandemic, resilience indicators have gained popularity as a means of assessment. Economic security is often evaluated using macroeconomic indicators such as GDP, inflation rate, unemployment rate, government debt, and trade balance. These allow analysts to assess a country's resilience to external and internal economic shocks.

The use of composite indices allows for the integration of multiple indicators into a single aggregated measure. For instance, Kharazishvili et al. (2020) proposed a comprehensive economic security index that includes five core components: financial stability, production potential, innovation capacity, resource availability, and the socio-economic environment. This approach enables monitoring the dynamics of economic security and facilitates comparisons across countries and time periods.

The Global Competitiveness Index (GCI), developed by the World Economic Forum (WEF), is one of the most comprehensive international measures for assessing national competitiveness. While its primary aim is to identify factors affecting productivity and long-term growth, it also integrates critical components of economic security, such as macroeconomic stability, financial system efficiency, and innovation potential. In the context of the GCI, macroeconomic stability encompasses control of inflation, fiscal balance, and debt sustainability. A stable macroeconomic environment

is essential for attracting both domestic and foreign investment, for maintaining effective social policy, and for guaranteeing long-term economic security. As Sala-i-Martín and Artadi (2004) write, "An economy cannot grow if the macroeconomic environment is unstable or unfavourable" (p. 18). Another key factor is the efficiency of the financial system, which is assessed based on market depth, access to capital for businesses, and the quality of regulation. A stable and accessible financial system promotes capital mobility and reduces economic vulnerability. The GCI also evaluates countries' innovation capacity, including investment in R&D, collaboration between universities and industry, and the number of patents. Innovation is regarded as a key driver of competitiveness and long-term security. While the GCI does not directly assess economic security, its structure clearly indicates that security is inseparable from competitiveness.

One of the methods for assessing economic security is the Human Security Model introduced in the 1994 Human Development Report by the United Nations Development Programme (UNDP). This model marked a paradigmatic shift in the understanding of security from state-centred defence to the protection of human well-being. According to UNDP (1994), security should be defined not only in terms of military protection but also as freedom from fear and want. Economic security is one of the seven dimensions of human security and encompasses income, employment opportunities, access to essential resources, and social protection. Tadjbakhsh and Chenoy (2007) argue that economic security forms the foundation of peace and human dignity, and that its absence often correlates with violence, inequality, and migration. As stated, "*Economic insecurity can be both a cause and a consequence of violent conflict*" (Tadjbakhsh & Chenoy, 2007, p. 45).

In democratic societies, where political decisions are shaped by public sentiment, the neglect of subjective security can lead to unexpected political changes (e.g., the rise of populism or a decline in trust in institutions). Osberg (2010) argues that it is essential to combine objective and subjective data, since only then is it possible to create a holistic model of well-being: such an approach would reveal the true level of economic security in a crisis-prone modern society. While all of the previously discussed indicators are important, they do not capture one critical dimension - people's subjective sense of security. This is often referred to as the "*security paradox*" a situation where objective data shows improvement, but people remain sceptical about the economic future (Inglehart & Norris, 2016). This paradox is particularly visible during periods of economic growth that coincide with rising social inequality, when society experiences information overload, heightened risk communication, and the lingering psychological effects of past crises (e.g., post-COVID-19). As Baldwin (2018) points out, "*the feeling of security depends not only on facts but also on interpretation fear is often stronger than risk*." Osberg (2010) adds that objective risks (such as unemployment, illness, widowhood, or old age) are only one side of the coin: "*when people don't know whether they will survive job loss, even low unemployment statistics fail to provide a real sense of security*." The subjective feeling of security also depends on trust in the state's protection systems, political stability, the overall economic climate, public awareness, media influence, and past crisis experiences (e.g., COVID-19). Canada's Index of Economic Well-being (IEWB) shows that even when unemployment was falling, anxiety about job loss remained high; income inequality lowered expectations for the future and increased subjective insecurity; and better health or pension coverage did not necessarily correlate with a stronger sense of safety (cf. Osberg, 2010). Survey data indicates that even during periods of economic expansion, 30–40% of people report feeling financially insecure (Eurobarometer, 2022). Young people often feel less secure than the actually "*vulnerable*" social groups. Increasingly, we see cases where the "*economic optimism*" index diverges from macroeconomic trends. Inglehart and Norris (2016) analyse the relationship between objective security and cultural values, revealing that dissatisfaction may arise from a lack of identity, cultural stability, or a sense of social justice even when the economy is strong. Bauman (2007) underscores that in postmodern society, individuals live in a constant state of risk awareness, and economic insecurity becomes an existential condition.

Therefore, integrating subjectivity into economic security assessment models is essential. Economic security cannot be measured by numbers alone it is also necessary to understand how people feel. The International Labour Organization (ILO) (2020) emphasizes the importance of social protection in ensuring economic security: "*Guaranteeing at least a basic level of income security to all, including workers in all types of employment, requires sustained investments in and effective coordination between social protection systems*." This indicates that ensuring economic security requires not only financial instruments but also a systemic approach that considers people's needs and emotions. The ILO (2020) also highlights the importance of job quality: "*The report highlights the persistence of significant deficiencies in the quality of work, including high rates of informality and working poverty... pronounced inequalities prevail in labour markets.*" Therefore, the evaluation of economic security should consider not only the number of jobs, but also their quality and their impact on workers' overall well-being. New synthetic indicators are currently being developed that combine objective economic data, public opinion surveys on financial security, institutional trust, expectations for the future, and media analysis (e.g., monitoring the sentiment of economic narratives).

Assessing economic security should encompass not only quantitative indicators, but also people's subjective feelings and experiences. For this reason, it becomes increasingly relevant to explore not just the content of economic security,

but also how it is represented and articulated in public discourse, especially in the media. The media are one of the most powerful platforms for constructing social reality, and the narratives they produce shape collective public perception. As Piper (2021) states, media representations during times of crisis become central sources of collective emotions and reactions. This aspect is especially important in democratic states, where citizens' trust in public institutions, their choices in political processes, and social stability are partly determined by the realities shaped by the information environment. Matonytė et al. (2024) emphasize that media narratives not only reflect but also shape public reality. Preßl (2021) notes that media analysis has become "*an essential component in evaluating how society interprets economic signals and threats.*" Similarly, Büyükbay (2024) highlights the media's role in shaping "*collective risk perception*." Therefore, analyzing economic security in public discourse not only allows us to measure social resilience, but also to develop effective communication strategies that strengthen institutional trust, reduce panic, and encourage citizen engagement in crisis management.

Philosophical Approaches to Economic Security. Although the concept of economic security has already been presented in a general context, it is necessary to separately analyse how different philosophical directions conceptualise this concept. This subsection focuses on comparing different philosophical perspectives – how they explain the assumptions, sources, aspirations and policy goals of economic security. This reflects different value positions on what constitutes "*security*", "*threat*", or "*risk*" in economics. Each of these concepts answers different questions and raises different priorities for public policy makers. This approach allows not only to understand the theoretical dispute between paradigms, but also to choose a research position when analysing media discourses.

One of the dominant historical interpretations of economic security is based on the liberal paradigm, which is based on the idea that the market, competition and free trade by themselves ensure state stability. State intervention is treated as an exception, necessary only to ensure efficient market activity. According to this logic, the more economic exchanges take place, the more the probability of conflicts decreases, as countries become interdependent. As Barbieri (2002) states, from the perspective of the liberal paradigm, economic security is not ensured through control or isolation, but through integration, transparency and investment openness. Liberalism in the analysis of economic security is based on the fundamental assumption that free markets, open trade channels, institutional integration and international cooperation are key elements in achieving stability and security. Unlike proponents of the realist or neorealist paradigms, liberals treat economic security not as state control of resources, but as effective involvement in the global market and trust in international institutions (Keohane & Nye, 2017). According to Barbieri (2002), "*economic interdependence reduces the risk of conflict and creates a structural incentive for security*", which is especially relevant in the modern era of globalisation, where countries' economic relations are becoming not only an instrument of profit but also of security. The liberal paradigm also emphasises the role of institutions – from the World Trade Organisation (WTO) to the mechanisms of the European Union – as guarantors that reduce transaction risks and increase predictability (Baldwin, 2018). Liberal analysis of economic security often emphasises the dimension of human security, that is, the ability to ensure personal dignity, access to services, financial stability and social protection through the functioning of the market. As Higgott and Watson (2008) point out, liberalism is not limited to economics – it offers a normative vision in which economic security is achieved through international regulation, efficient markets and human mobility. However, liberalism faces challenges in the contemporary debate. In 2008, the financial crisis, the COVID-19 pandemic and Russian aggression have shown that excessive dependence on the global market without internal protection mechanisms can become a threat. Therefore, this paradigm is often supplemented today by the concept of resilience, in which the market still plays an important role, but at the same time, a balance between national security and strategic autonomy is necessary (Gereffi, 2020).

Neorealism, as a theoretical paradigm of international relations, is based on the basic assumption that the state is the main actor seeking survival in an anarchic international system (Waltz, 2010). According to this model, economic security is the ability to control key strategic sectors (e.g., energy, defence industry), ensure the availability of resources and limit dependence on unpredictable partners. According to Kirshner (2020), "*economic security refers to the ability of a state to act independently of the economic decisions of other states, while maintaining control both nationally and transnationally*". This paradigm pays special attention to the control of energy, raw materials, technology and infrastructure, which are considered strategic elements. Some authors, such as Cohen (2017), argue that economic security becomes a geopolitical weapon when countries use sanctions, investment controls and trade policies to ensure national interests. The neorealist tradition also emphasises the importance of self-sufficiency and resilience. According to Mearsheimer (2001), "*dependence on global systems, even if they are economically efficient, can become a source of national vulnerability*". Therefore, states, acting according to the logic of neorealism, often choose policies of economic nationalism or strategic autonomy, limiting the influence of foreign capital in the most sensitive sectors. Persaud (2022) argues that the degree of economic sovereignty of a state is directly related to its ability to protect the well-being of its population in the event of a crisis. The neorealist paradigm emphasises the role of the state and strategic autonomy. Economic security is considered a matter of resource control, protection of domestic production and geopolitical balance (Smith, 2020;

Zdanavičius & Statkus, 2020). Smith (2020) and Zdanavičius & Statkus (2020) emphasise that energy or technological dependence is not only an economic but also a security threat. The COVID-19 pandemic and Russia's war in Ukraine have only further strengthened this view. Countries are reviewing their dependence on external supply chains, investing in domestic production, energy independence, and control of critical technologies, which is consistent with neorealist priorities (Blackwill & Harris, 2016). A weakness of this paradigm is that the state can become protectionist, closed to other states.

The critical theoretical approach, based on neo-Marxist and post-structuralist thought, holds that economic security cannot be assessed without an analysis of power structures. Its representatives emphasise social exclusion, class inequalities, gender disproportion and the insecurity of marginalised groups. Critical theory in the analysis of economic security goes beyond the narrow framework of economic indicators and seeks to understand the deeper structural forms of power that determine economic inequality, marginalisation and social vulnerability. Its origins lie in the Frankfurt School, but in modern economic analysis, critical theory has transformed into a normative instrument that allows us to rethink what it means to be "*secure*" in a society where economic resources are distributed unevenly. Bilgin (2023) notes that "*economic security is not just a statistical indicator – it is also the ability to live with dignity, without the constant threat of being excluded from the system*". The critical paradigm raises issues of inequality, marginalisation and social justice. Bilgin (2023) argues that "*economic security is part of human rights*" – and therefore it must be assessed through the prism of opportunities, dignity and social cohesion. According to Horkheimer (1972), "*critical theory seeks not only to explain the world, but also to change it*" – this is especially important in a context where economic security is related to people's dignity, social protection and the possibility of living without poverty. In this view, the lack of economic security is seen as a systemic form of violence, not just a technical problem.

Unlike traditional paradigms, the critical approach focuses on the analysis of inequality and power. Economic security is understood here as a question of ensuring human rights, and the main goal is to guarantee a dignified existence for all. Walker (2002) notes in his work that the concept of "*security*", dominant in the classical IR (International Relations) literature, is "*too state-centric*" and ignores the everyday economic traumas experienced by socially excluded people. Therefore, critical analysis suggests expanding the category of security to "*everyday security*", focused on ensuring housing, food, education and access to services. Fehér's (2020) study on Eastern Europe shows that discursive narratives about the crisis often hide deep structural inequalities that political and economic institutions support. His work argues that media rhetoric about "*resilience*" often acts as an ideological veil to cover up deepening inequalities. A critical theoretical approach requires fundamental structural changes and is more difficult to integrate into traditional politics, which is its weakness. An analysis of the impact of neoliberal policies is provided by Fraser (2020), who argues that the exclusion of unpaid work, the care crisis and women's vulnerability from economic accounting threatens social stability. This opens cross-disciplinary connections between critical and feminist theory.

Feminist economic security theory offers a radically different view of security, not as an instrument of state power or a macroeconomic condition, but as the security of everyday life and care systems. This approach criticises the traditional security discourse, which ignores unpaid care work, social vulnerability within the family, and the impact of gender inequality on economic stability. As Elson (1999) points out, economic policies often assume a "*neutral market*", but in reality, their effects are deeply gender asymmetric. For example, the reduction of the public sector, the privatisation of care services and flexible work models have a disproportionate impact on women. Feminist theory raises the question of how the concept of economic security reflects (or ignores) the situation of women and the significance of unpaid work. It shows that official economic statistics often overlook invisible work; work which is essential for the functioning of society. Economic security in feminist analysis means both economic autonomy and protection from dependency relations. Feminist theory also emphasises the economic challenges of the family and the vulnerability of women in times of crisis. According to Tickner (1992), economic security policies often ignore the unpaid care work that is essential for the functioning of society. This theory highlights invisible work (caregiving, child-rearing), the importance of which is often ignored in economic statistics. Young (2008) emphasises that households often become centres of the "*invisible economy*", and the family burden, especially for women, is a structural barrier to full participation in the economic system. A feminist approach requires rethinking these structures and incorporating them into policymaking. Tickner (1992) argues that "*security must be reinterpreted through the prism of human experience, not state defence*". She proposes the so-called gender-sensitive security paradigm, in which women's experiences become the centre of analytical significance. In this way, feminist analysis expands the category of security to include the dimensions of essential access to basic services, decent work, and emotional and social stability. Women often experience greater insecurity during crises, and their work is inadequately valued or excluded from decision-making processes (Tickner, 1992). A feminist approach requires a reconceptualisation of the economy as a social process in which informal, unpaid work is essential for the functioning of society. In contemporary academic debate, feminist authors such as True (2012) emphasise that gender inequality is not only a moral but also an economic issue, and that investments in care infrastructure (childcare, elderly

care, social guarantees) are necessary conditions for economic security. Furthermore, feminist analysis is often integrated with the human security paradigm, which focuses on the guarantee of individual dignity, integrity and opportunities, not just physical protection from threats. Analyses by authors such as Robinson (2015) suggest that economic security should be measured both in terms of GDP and to what degree people can live free from exploitation and with the right to full participation in society. This theory is appreciated for its emphasis on gender equality and social visibility but is often dismissed as "*uneconomic*" in traditional analyses.

The ecological perspective links economic security to long-term sustainability: if economic activity disrupts the ecological balance, it eventually becomes unsafe for society itself (Barry, 2012). According to Barry (2012), economic security should be measured not only by GDP growth, but also by the ability to maintain ecological balance, social cohesion and intergenerational justice. In this way, economic security cannot be assessed without an analysis of climate change, resource depletion and environmental risks. Ecological crises – climate change, biodiversity loss, and overexploitation of resources – already pose direct threats to the economy: disrupt agriculture, pose risks to energy supply, and cause waves of migration. According to Dalby (2009), "*economic security must be integrated with climate policy – otherwise it becomes artificially separated from real systemic risks*". Barry (2012) and other authors emphasise that economic security must be long-term and sustainable, which means responsible use of resources, transition to renewable energy and climate change management. This concept links security with environmental awareness – if economic development destroys ecological foundations, it becomes a threat to itself. The ecological perspective of economic security is difficult to reconcile with rapid growth or short-term political ambitions. An ecological approach requires rethinking development strategies – instead of the growth paradigm, a green economy, circular production, carbon emissions reduction and renewable energy are proposed. Raworth (2017) proposes the so-called "*circular security zone*" in the "*circular economy*" model, where it is necessary to ensure basic social conditions for people without overspending the planet. Adger et al. (2013) analyse the impact of climate change on security and note that "*the ability of people to adapt is no less important than physical infrastructure*"; therefore, social inequality, health disparities and lack of education become factors that multiply vulnerability in the context of the climate crisis.

Table 4 compares the five main theoretical paradigms of economic security in terms of their sources of security, identified threats, and policy responses.

Table 4. Economic Security Paradigms: Theoretical Comparison

Perspective	Source of Security	Source of Threat	Political Response
Liberalism	Market integration, interdependence	Protectionism, market disruptions	Institutional regulation, trade liberalisation
Neorealism	State power, autonomy, and resource control	External dominance, dependency	Strategic autonomy, protection of national sectors
Critical Theory	Social justice, reducing inequality	Economic exclusion, marginalisation	Strengthening social policies, inclusion
Feminism Paradigm	Recognition of care work, gender equality	Unpaid labour, family vulnerability	Gender policy, family support models
Ecological approach	Environmental sustainability, ecological balance	Environmental degradation, climate crisis	Promotion of green investments, transition to sustainability.

Source: compiled by the author

The table above provides a consistent assessment of how different theoretical paradigms interpret the concept of economic security, identify threats, and formulate policy responses. The liberal paradigm bases security on market logic and interdependence but becomes vulnerable to disruptions in the global market. Neorealism emphasises the role of the state and strategic autonomy, believing that external dependence poses the main threat to national security. Critical theory draws attention to social structure, inequality, and marginalised groups, proposing to ensure security through strengthening social cohesion. Meanwhile, the feminist paradigm expands the field of security to everyday life – family, invisible work, emotional vulnerability – and proposes gender-sensitive policy measures. The ecological approach views economic security as inseparable from long-term environmental stability and climate sustainability, therefore emphasising green investments and transformative policies. This theoretical map makes it clear that economic security is a multifaceted phenomenon that requires a comprehensive approach. Different paradigms complement each other and together shape the contemporary political economy discussion about what determines the security of a state, society, or individual against the backdrop of economic turmoil.

Economic Security in National Policy. Economic security in Lithuania's national policy has become an integral element of the entire security architecture. While traditionally, security was associated with military and geopolitical

dimensions, increasing emphasis is now placed on the fact that without a stable economic environment, long-term national resilience becomes impossible. Inglehart and Norris (2016) argue that economic security is a multidimensional phenomenon requiring an integrated approach that includes both objective indicators and subjective experiences. Economic security involves the ability to protect vital economic sectors from internal and external threats, to ensure public welfare, maintain functional infrastructure, and create a reliable system of economic governance. These aspects are comprehensively analysed by Kharazishvili et al. (2020), who evaluate sustainable development using indicators of economic vulnerability and human development. Research shows that countries with higher social protection and lower income inequality tend to be more resilient to crisis situations. The evaluation of economic security must therefore be based on both national and international indicators, including GDP dynamics, trade balance, employment levels, and public debt. In today's geopolitical context, economic security is gaining increasing significance as a means of strengthening state autonomy, resisting external manipulation, and preserving national cohesion.

Economic security is a core component of Lithuania's national security policy, as outlined in various strategic documents. These documents emphasize the importance of economic stability, energy security, infrastructure development, and resilience to external threats. In Lithuania's National Security Strategy (2017), economic security is identified as one of the key components alongside defence, information security, and internal stability. The strategy underscores that "*the sustainability of state development economic, energy, environmental, information, cyber, and social security is a primary national security interest*." Economic security encompasses not only economic growth, but also resilience to external threats such as economic coercion, blockades, and the takeover of strategic sectors. This means that the state must ensure the protection of strategic industries, enterprises, and infrastructure, and implement measures to prevent economic actors that do not meet national security interests from acquiring critical assets such as land. Additionally, economic security is closely tied to energy independence. The strategy notes the necessity of maintaining mandatory energy reserves, strengthening regional cooperation, and ensuring the operational capacity of energy companies under emergency conditions.

Since the shift in the geopolitical situation in 2014, especially following Russia's 2022 invasion of Ukraine, there has been a growing recognition of the need to strengthen not only military but also economic resilience. As Genys, Krikštolaitis, and Pažėraitė (2024) observe, Lithuanian strategic documents increasingly emphasize "*not only energy independence, but also the psychological preparedness and social stability of the population*." The state's vision for economic security is reflected in how it sets its strategic priorities. Vilpišauskas (2024) writes that "*in Lithuanian politics, economic security is no longer equated solely with economic growth: it is becoming a comprehensive concept that connects infrastructure protection, information security, social cohesion, and access to critical resources*."

The State Security Department's report, Assessment of Threats to National Security (2024), analyses risks, including economic ones, that could impact national security. The document emphasizes that economic pressure and dependence on external supply chains may be used as tools to influence state decision-making. It also notes that economic threats, such as reliance on a single supplier or investor, can be leveraged to exert political pressure. Therefore, it is important to diversify both supply chains and sources of investment.

Energy independence has been one of Lithuania's key economic security goals for more than a decade. Detachment from Russian gas and electricity imports, the construction of the LNG terminal in Klaipėda, and the NordBalt interconnection with Sweden have not only diversified energy sources but also symbolized a strategic drive toward autonomy. As Zdanavičius and Statkus (2020) observe, "*energy independence policy in Lithuania has become a symbolic security doctrine that affirms a vision of national sovereignty*." These projects have strengthened the country's energy security, boosted competitiveness, and deepened integration with the EU's energy markets. The National Energy Independence Strategy (2024) highlights that since the restoration of independence, Lithuania has pursued a consistent policy of energy security and has freed itself from near-total dependence on energy imports from the Russian Federation. Major shifts since 2021 have occurred in the renewable energy sector - electricity generation from renewables has increased by approximately 80%. As a result, by February 24, 2022, when Russia launched a full-scale military invasion of Ukraine, Lithuania was among the first countries in Europe able to completely cease importing electricity, gas, and oil from the Russian Federation without jeopardizing energy supply security.

The Klaipėda LNG terminal, operational since 2014, has become a strategic instrument in reducing dependency on Russian gas supplies. This decision aligned with EU regulations on gas supply security, enhanced price regulation capabilities, and ensured a reliable supply chain (Burbulytė-Tsiskarishvili, 2015). Also significant is the NordBalt electricity interconnection with Sweden, completed in 2015. This connection not only improved electricity supply security but also encouraged market competition and accelerated the Baltic states' synchronization with Western European energy networks.

A key area of focus within the discourse on economic security is the protection of critical infrastructure — namely, the continuity and resilience of energy, transport, water supply, telecommunications, financial, and information tech-

nology systems. According to Bankauskaitė and Šlekys (2023), "*critical infrastructure becomes a target not only in cases of physical threat, but also through cyberattacks, information disruptions, and supply chain vulnerabilities*." The importance of critical infrastructure has grown significantly since the COVID-19 pandemic and the start of the war in Ukraine. There is now a pressing need to develop fast-response indicators of economic security that encompass the resilience of infrastructure to external shocks.

Economic security cannot be ensured without public participation and trust in state institutions. Navickienė, Valackienė, and Činčikaitė (2023) propose viewing social resilience as the ability to maintain functionality despite economic, political, or informational disruptions. Data from 2022–2023 shows increasing fluctuations in public trust in institutions, particularly during periods of inflation and energy challenges. A representative public survey commissioned by the Ministry of the Interior in September October 2023 revealed varying levels of trust in national and municipal institutions. For example, trust in the police was at 72%, armed forces 77%, President's office 68%, and Government 36%. The diagram (Figure 2) illustrates the changes in public trust in key institutions (police, military, presidency, and government) in 2022 and 2023, considering economic and energy-related challenges. As seen in the chart, a modest decline in trust was recorded across all institutions in 2023. The most significant drop was in trust toward the Government — from 48% to 36% — likely linked to rising energy prices, the impact of inflation on purchasing power, and ongoing debates about energy security and financial compensation measures. Trust in the military and police remained high, which may be attributed to the broader context of external security threats (e.g., Russia's war in Ukraine). Trust in the President's office remained relatively stable.

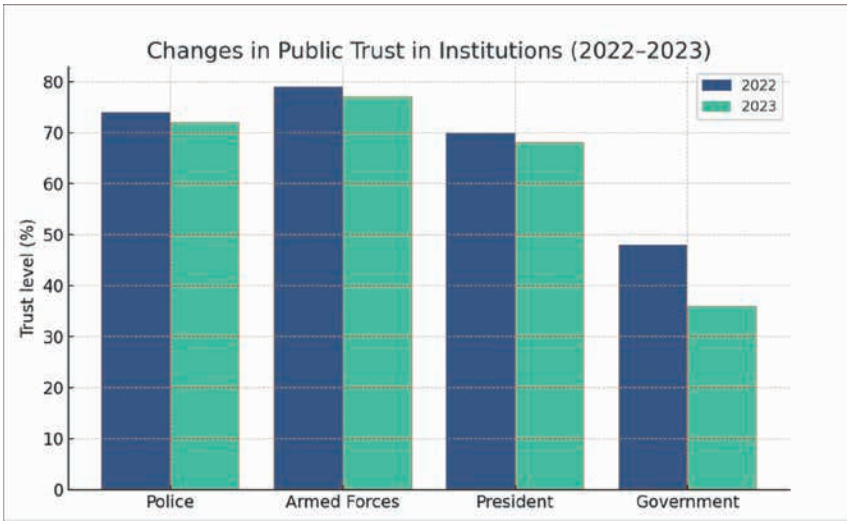


Figure 2. Lithuanian Citizens' Trust Changes in the Main Institutions (Police, Armed Forces, President and the Government) from 2022 to 2023
Source: 2022 Eurobarometer

The 2022 Eurobarometer survey showed that 69% of Lithuanians trusted the European Union, compared to only 36% who trusted their national government. This reflects greater confidence in EU institutions than in domestic ones. Inflation remained one of the top concerns among Lithuanian citizens. In 2023, 52% of respondents identified inflation and rising prices as the country's most important issue, and 62% cited it as their biggest personal concern. A March 2023 survey revealed a four-point drop in trust in the police and a three-point drop in trust in the government compared to the previous month. Trust in institutions responsible for economic policy has become a key variable, influencing not only stability but also the public's ability to adapt to changing conditions.

Modern economic security discourse increasingly incorporates the dimension of information security. Disinformation about economic processes can incite panic, disrupt consumer behaviour, and influence market dynamics. If we consider information control as one of the more subtle components of economic security, it becomes clear that psychological safety and economic rationality are inseparable. Analyzing the role of economic security in Lithuanian national policy reveals that this dimension is clearly embedded as a core element of national security. Economic security includes not only economic growth but also resilience to external threats, protection of critical sectors, control of strategic resources, and public trust in state institutions. Lithuanian strategic security documents explicitly frame economic security as a priority area. This is evident in the country's pursuit of energy independence, reinforcement of infrastructure resilience, control over strategic investments, and efforts to diversify supply chains. As Bayramov and Neuman (2024) note, such measures are not only economic but also political responses to growing external pressure, and they reinforce the state's capacity for autonomous decision-making.

As the geopolitical situation evolves, especially since Russia's invasion of Ukraine, Lithuania's political discourse increasingly emphasizes the need to strengthen not only military, but also economic and informational resilience. Informational threats, disinformation, and the manipulation of economic data have become significant risks, and analyzing them has become an inseparable part of understanding economic security. This aligns with the modern perspective on economic communication as both a political and symbolic process, as discussed by Uhde (2024) in his analysis of discourse structures in Central Europe. Lithuania's economic security architecture is increasingly based on an integrated approach that includes institutional reforms, societal resilience, information control, and the management of critical resources. In summary, the strengthening of economic security in Lithuania is not limited to financial or technical measures — it encompasses strategic thinking, openness to civic engagement, and the ability to identify risks not only in numerical data but also in discourse, public space, and everyday citizen experience.

The Theory of Media Power and Discourse Analysis

Discourse Theory (Foucault, Fairclough, and others). Discourse theory, as developed by thinkers like Michel Foucault and Norman Fairclough, provides a framework for analyzing how language, knowledge, and power relations shape social reality, including the very concept of economic security.

Foucault emphasized that discourses are not merely linguistic structures, but mechanisms of power that define what is considered "*true*" or "*acceptable*" in each era. He argued that discourses produce knowledge, which in turn reinforces power structures by determining who is authorized to speak, what can be said, and how it is interpreted. This interplay of power and knowledge what Foucault called "*power/knowledge*" suggests that knowledge is never neutral but always intertwined with practices of power. He famously wrote: "*There is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations*" (Foucault, 1980, p. 113). This means that knowledge and power are inextricably linked, and discourses not only reflect but actively shape social reality. Thus, the concept of economic security in public discourse is not simply an objective reality, but is constructed through political rhetoric, expert knowledge, media narratives, and institutional communication. Foucault noted that "*truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. And it induces regular effects of power*" (Foucault, 1980, p. 131). Accordingly, what is perceived as "truth" about economic security is formed through discourse and power structures. In this sense, discourse both mirrors and produces social reality by instituting certain norms and values that can serve to maintain authority or suppress dissent.

Other scholars also highlight Foucault's contributions to discourse analysis. For example, Tellmann, in her article "*Foucault and the Invisible Economy*" (Foucault Studies, 2009), examines how Foucault incorporated concepts of power, knowledge, and the subject into the discourse of economics. She points out that Foucault was interested not only in classical political economy, but also in how economic knowledge became "*invisible*" i.e., naturalized and unquestioned. This "*invisible economy*" concerns not just what economics does, but how it operates as a rationality that structures state interventions, social order, and individual behaviour. Tellmann argues that Foucault's perspective enables us to treat discourses on economic security as products of specific rationality regimes, which shape not only policy directions but also how we perceive risks, crises, and even "*normalcy*". Economic security, in this view, is not a neutral administrative goal, but a discursively constructed objective shaped by temporal, institutional, and epistemic factors. Tellmann shows that discourses on economic stability or crisis cannot be divorced from the power relations that produce them, for example, when central banks, the IMF, or governments define what constitutes "*responsible*" fiscal policy or "*sustainable*" growth, they are not merely reflecting reality but actively producing it. This approach is especially relevant to current discussions of economic security, where public discourse does not simply present facts (e.g., inflation or deficit figures) but also constructs collective perceptions, values, and emotional responses. Foucault's theoretical tools thus help reveal not only what we say about the economy, but how and why we say it - what kinds of discursive knowledge become dominant, and which are marginalized.

Fairclough, one of the leading figures in Critical Discourse Analysis (CDA), argues that language is not merely a medium for information exchange but a powerful social mechanism for embedding and sustaining ideologies and social inequalities. His three-tiered model of analysis text, discourse practice, and social practice, demonstrates how discourse functions across linguistic, institutional, and societal levels. In this framework, discourse analysis of economic security helps us understand how state institutions, the media, or international organizations represent risks, economic priorities, or policy decisions as neutral, self-evident truths, while marginalizing alternative narratives or solutions. For example, during times of economic crisis, austerity policies may be presented as inevitable, masking their ideological basis behind a veneer of rational governance. This kind of linguistic neutralization where political decisions are reframed as technical necessities, is a key focus of Fairclough's critique.

When compared to Foucault's theoretical principles, both parallels and distinctions become evident. Both Foucault and Fairclough acknowledge the significance of discourse within power structures, but Foucault focuses on the genealogy

of discourses examining how "regimes of truth" emerge across historical periods, and how knowledge and power are woven into social practices. From his perspective, discourses are technologies of power that shape subjectivities and regulate behaviour. The concept of economic security, through Foucault's lens, is not an objective fact but a discursively constructed phenomenon, operating through expert knowledge, political rhetoric, and institutional linguistic practices. Fairclough, by contrast, places emphasis not only on the historical context of discourse, but also on its concrete linguistic structure and its role in reinforcing social inequality. His method allows for the identification of how ideological meanings are embedded through grammatical structures, metaphors, and semantic patterns. Thus, CDA proves especially useful in analyzing economic security discourses, particularly in understanding how certain economic risks (e.g., inflation, unemployment, migration) are presented as existential threats and what kinds of social actions such narratives stimulate or restrict.

Laclau and Mouffe, in their seminal work *Hegemony and Socialist Strategy* (1985), developed a poststructuralist theory of discourse, building on Foucault's insights into discourse and power and Derrida's ideas of deconstruction. Their theory emphasizes that social reality lacks any essential or stable foundation, it is discursively constructed through hegemonic struggles between competing systems of meaning. Concepts like "*the people*," "*the nation,"* "*economic security,"* or even "*democracy*" are not seen as objective or universal entities but as political constructs whose meanings change depending on hegemonic discourse. Laclau and Mouffe argue that hegemony operates through discursive fixation meanings, initially fluid and ambiguous, become "*stabilized*" (i.e., collectively accepted) through institutional mechanisms, media, and political articulation. This means that the societal understanding of economic security may become dominant through the acceptance of discourses while marginalizing alternative meanings. In comparison with Foucault, Laclau and Mouffe's poststructuralist discourse theory shares the notion that there is no pre-given "*truth*" or "*reality*" everything is constructed within discourse. However, unlike Foucault, who focuses on the genealogy of discourses and the micro-analytics of power, Laclau and Mouffe emphasize political articulation as the core principle of discursive functioning. Their model is overtly politicized: hegemony is viewed as a discursive process through which certain forces consolidate their interpretations as "*natural*." Fairclough, meanwhile, maintains a closer connection to empirical methods of language analysis and the intention of social critique. His CDA theory, unlike Laclau and Mouffe's more abstract model, seeks to uncover how everyday language use reproduces ideologies as social "*normality*." Though all three approaches (Foucault, Fairclough, Laclau & Mouffe) recognize discourse as central to shaping social reality, they differ in emphasis: Foucault focuses on the relationship between knowledge and power, Fairclough on the reproduction of ideology through language, and Laclau & Mouffe on political struggles over meaning that establish hegemonic discourses. This theoretical foundation enables a deeper understanding of the structure and dynamics of economic security discourses, revealing how specific threats, protective strategies, or institutional priorities are established in the public sphere.

Glynos and Howarth (2007) expanded Laclau and Mouffe's theory through what they call the logics of critical explanation, which consists of social, political, and phantasmatic logics. They emphasize that analyzing hegemonic discourses requires not only identifying which meanings dominate, but also how those meanings become accepted, persuasive, and legitimized. This allows for a better understanding of how economic security becomes embedded in public consciousness as a logic of necessity, as if there were no alternatives. Norval (2000), in turn, stresses the methodological challenges of discourse theory, suggesting an examination of how hegemonic narratives evolve when classical binary oppositions (e.g., security/insecurity, state/market) are transcended. Her perspective reveals how economic security discourses can be dynamic, unstable, and reconstructable depending on political developments, crises, or media narratives.

Van Dijk is one of the leading figures in critical discourse analysis who developed the so-called socio-cognitive model. This approach combines discourse analysis with principles of social psychology, examining how discourse's structure and solidify social relations, power, and ideology. According to Van Dijk (2017), "*discourses do not merely reflect social reality, but actively construct it by shaping cognitive models' mental representations people create as they interpret texts and language*" (p. 83). This implies that public discourses on economic security not only describe reality but also shape its interpretations, embedding viewpoints as dominant. Van Dijk pays special attention to the role of media, which, he argues, "*functions as a discourse control institution that can selectively produce, transform, or disseminate knowledge to match the interests of certain social groups*" (Van Dijk, 1993, p. 255). In the context of economic security discourses, this becomes evident through the portrayal of issues like inflation, migration, or energy crises as unavoidable threats, while alternative interpretations are neutralized. Van Dijk emphasizes that "*ideologies function as control mechanisms that prevent the development of alternative forms of knowledge*" (2006, p. 372). Unlike Fairclough, who highlights grammatical structures and institutional mechanisms, Van Dijk's analysis relies more on the mental models of social groups formed through repeated narrative exposure. This helps explain why certain discursive figures such as "*external threats*" or "*economic instability*" become deeply entrenched in public consciousness. Van Dijk's theoretical model offers analytical tools to examine how media and political leaders articulate economic security narratives in ways that legitimize specific political choices and reinforce worldviews. This perspective is essential to understanding not only the words used in discussing economic security, but also why these forms of language become dominant.

The Discourse-Historical Approach (DHA), developed by Ruth Wodak, stands out among CDA frameworks by systematically integrating textual analysis, social context, and historical analysis to understand how discourses evolve over time and how they relate to political power, ideology, and identity. According to Wodak, "*discourses are dynamic: they are created and transformed across historical periods and political situations*" (Wodak, 2001, p. 64). She also emphasizes that discourse analysis must be multi-layered, encompassing textual structures, intertextuality, context, and the functions of discourse. DHA allows us to identify how various discourses on economic security emerge in response to specific events such as crises, military conflicts, or waves of migration. This approach uncovers not only which words are used but also how those words gain meaning within historical circumstances. Wodak argues that "*there is no discourse without context; and no meaningful analysis without an understanding of the socio-political environment in which the discourse functions*" (Wodak & Meyer, 2009, p. 20). In the context of economic security, this means that texts concerning crises, price surges, or energy independence must be analysed with reference to the prevailing values, political climate, and collective memory of the time. Furthermore, Wodak highlights that discourses often serve to legitimize decisions, for example, financial policies or security reforms by constructing threats and presenting them as unavoidable. She writes that "*one of the primary goals of political discourse is to legitimize specific actions, which is achieved through discursive mechanisms that establish normative views*" (Wodak, 2015, p. 39). Therefore, DHA is particularly valuable in analyzing how public opinion about economic security is shaped through discourse and how perceptions of "*threats*" are constructed. It also enables the examination of shifts in political communication, especially in relation to globalization and the formation of transnational narratives. From this perspective, Wodak's method allows researchers to trace how local discourses on economic security intersect with international narratives, for instance, those reflected in EU policy frameworks or NATO communications.

The German scholar Siegfried Jäger extended Foucault's discourse theory by integrating the concept of the "*dispositif*" into CDA methodology. Jäger maintains that discourses are inseparable from power mechanisms and institutional structures that shape not only public opinion, but also social relations and the boundaries of knowledge. According to him, "*discourses do not operate solely on the linguistic plane. They materialize through institutional practices, norms, laws, and even architecture*" (Jäger, 2001, p. 72). He argues that every discourse functions as a combination of knowledge and power, encompassing not only textual but also social and material components, which he refers to as a "*discursive dispositif*." From this perspective, discourse cannot be separated from the context in which it operates: "*Discourses are constructed by institutional conditions that determine what can be said, what remains unsaid, and what is assumed to be self-evident*" (Jäger & Maier, 2016, p. 37). This viewpoint enables researchers to explore how linguistic statements become normative assumptions, supported by the state, media, or educational institutions. A key contribution of Jäger is his emphasis on media discourse analysis - he believes that media is the primary channel through which discourses circulate and gain hegemonic status in society. Therefore, when analyzing discourses of economic or national security, one must include not only textual analysis, but also structural context to understand how and why certain discourses become dominant and what configurations of power they support or challenge.

Joanna Thornborrow is a prominent researcher in the field of language and power, particularly in institutional contexts such as media, politics, and public debate. In her book *Power Talk: Language and Interaction in Institutional Discourse* (2002), she argues that discursive formats — such as television debates, interviews, or press conferences are not just channels of communication but structures in which authority is embedded, and power relations are formed. According to Thornborrow, "*institutional discourses define who may speak, how to speak, and what to say, which means that language becomes not only a medium of communication, but also a tool of control*" (Thornborrow, 2002, p. 5). She demonstrates how linguistic choices such as modality, question formation, and intonation affect participants' positioning and their ability to participate in power structures. For example, media debates often show asymmetrical linguistic behaviour between politicians and journalists, reflecting and reinforcing institutionalized authority. Moreover, Thornborrow emphasizes that public discourse analysis must consider not only textual content but also the structure of interaction who initiates the conversation, who has the right to close topics, how time is managed, and what social etiquette governs discourse. This is especially important in the analysis of economic security narratives, where the media format itself can contribute to the normalization or marginalization of certain narratives. Thornborrow also shows how institutional discourses construct identities both of citizens and of institutions, which is highly relevant in examining public trust and the dynamics of political legitimacy.

Table 5 below summarizes the main authors of discourse theory - Michel Foucault, Norman Fairclough, Ernesto Laclau & Chantal Mouffe, Teun A. van Dijk, Ruth Wodak, Siegfried Jäger, and Joanna Thornborrow - alongside their analytical approaches and focal points.

Table 5. Comparison of Discourse Theory

Author	Approach	Key Concepts	Focus	Citation
Michel Foucault	Genealogical/ archaeological	Power/Knowledge, Dispositif, Discourse	How discourses shape truth and knowledge through power	Foucault (1980)
Norman Fairclough	Critical Discourse Analysis (CDA)	Textual, Discursive, Social practice levels	Language as social practice reproducing ideology	Fairclough (2013)
Teun A. van Dijk	Socio-cognitive CDA	Mental models, Ideological structures, Framing	Media discourse shaping public cognition	van Dijk (1993, 2006)
Ruth Wodak	Discourse-Historical Approach (DHA)	Context, History, Intertextuality	Change of ideologies over time and across contexts	Wodak (2015)
Siegfried Jäger	Foucauldian CDA	Dispositif, Discourse-materialism	Power/knowledge in institutional discourses	Jäger (2001)
Joanna Thornborrow	Institutional discourse	Authority, Interaction, Roles	How language constructs authority in institutions	Thornborrow (2002)
Laclau & Mouffe	Post-structuralist discourse theory	Hegemony, Articulation, Antagonism	Political construction of meaning and identities	Laclau & Mouffe (1985)

Source: compiled by the author

Theoretical models of discourse analysis represent distinct but complementary perspectives on how language shapes social reality, establishes power relations, and operates within ideological domains. Michel Foucault analyses discourse through a genealogical and dispositive lens, emphasizing the interplay between knowledge and power and the formation of subjects. His approach is rooted in the principle of historically contingent emergence of discourses, where truth is viewed as an effect of power. Norman Fairclough develops critical discourse analysis (CDA), focusing on language as a form of social practice. He distinguishes three levels of analysis: textual, discursive practice, and social practice. This demonstrates how language sustains ideologies and reproduces social inequality. In the poststructuralist theory of hegemony developed by Ernesto Laclau and Chantal Mouffe, discourse is conceptualized as a contested field of meanings, with social reality viewed as a temporary discursive fixation lacking essential foundations. Teun A. van Dijk emphasizes the cognitive mechanisms through which discourse affects audiences via the media. He highlights the role of mental models in shaping ideological attitudes. Ruth Wodak, in her discourse-historical approach (DHA), proposes analyzing language through historical and socio-political lenses, particularly emphasizing long-term transformations in power relations. Siegfried Jäger, drawing on Foucault's notion of the dispositive, extends discourse analysis by stressing that discourses are embedded within institutional structures, which not only linguistically but also materially sustain regimes of power. Joanna Thornborrow, for her part, focuses on how authority and power are constructed through language in institutional contexts (especially in the media and political discourse), employing tools such as dialogic structure, intonation, time management, and linguistic hierarchies.

All these authors agree that discourse is not merely a linguistic phenomenon - it both reflects and reinforces power structures, functions as an ideological system, and affects social action. What differs are their respective theoretical emphases, ranging from historical layers to structural and cognitive perspectives. These theories help reveal how economic security discourses are formed, whose interests they serve, what they exclude, and how they shape public perception, emotion, and political decision-making.

Considering the empirical goal of this study is to analyse the content and discourse of economic security narratives in Lithuanian media from 2020 to 2024, focusing on thematic, emotional, semantic, and visual narrative types in both public and commercial media. The most suitable theoretical approach is critical discourse analysis (CDA), as developed by Norman Fairclough. Its multi-layered methodology enables analysis not only of texts (both linguistic and visual), but also of the social practices that produce them (e.g., editorial policy, media market) and the broader socio-political context. For additional contextual analysis, Ruth Wodak's discourse-historical approach (DHA) is useful, particularly in situating media discourse within political and economic events and crises that have unfolded since 2020. Teun A. van Dijk's cognitive model may also be employed to uncover how narratives influence collective memory and public opinion.

Media as a Producer of Ideology. Contemporary media play a vital role not only in the dissemination of information, but also in the formation of ideologies, acting as channels of power structures. They can be analysed as spaces in which dominant discourses are created, circulated, and legitimized, influencing collective social perceptions and po-

litical decisions. By applying critical discourse analysis (CDA) and poststructuralist approaches, it becomes possible to reveal how media, through linguistic and visual formats, structure social reality by defining what is considered normal, acceptable, or threatening.

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Recent studies confirm that social media platforms (such as Twitter (now X), Facebook, and TikTok) are not neutral arenas for information dissemination, but actively participate in shaping, reinforcing, and polarizing ideological positions. A study conducted by Loru et al. (2024) revealed that users tend to form ideologically homogeneous communities, also known as "*echo chambers,"* in which information circulates through filters that reinforce pre-existing beliefs. The study found that "*the architecture of debate on social networks not only fails to prevent polarization, but it also structurally amplifies it through algorithmic content selection that aligns with the user's prior interactions and ideological preferences*" (Loru et al., 2024). This polarization is shaped not so much by individual ideological actors but by collective clusters of opinion that gradually solidify into shared narratives, such as anti-vaccine sentiment, anti-immigration rhetoric, Euroscepticism, or ultraliberal messaging.

Modern platform algorithms, based on machine learning principles, not only personalize user feeds but segment audiences based on behaviour. This means that different users are shown different "*realities*" that not only inform but ideologically mobilize. Pariser (2011) coined the term "*filter bubble*" to describe this phenomenon, in which users are exposed only to content that confirms their beliefs. As José van Dijck (2013) notes, platforms do not merely mediate information flows; they actively shape social meaning through technological, political, and economic logics.

Beyond the rational dissemination of information, social networks also reinforce ideologies through emotional impact — using memes, narrative fragments, and messages filled with outrage, fear, or irony. This process is fast, fragmented, and visually oriented, often surpassing the ideological effectiveness of traditional media formats. Research by Törnberg and Törnberg (2024) showed that visual and emotional elements enhance the spread of ideological messages because users on social media react more to narrative identities than to reasoned arguments.

Thus, contemporary social networks function as a new kind of ideological infrastructure. They consolidate like-minded users into virtual ideological clusters, amplify polarization through algorithmic content filtering, develop ideological identity through memes, emotional narratives, and selective information flows, and erode the shared information environment by replacing it with a fragmented and conflict-driven space. This dynamic presents serious challenges to democracy, the public sphere, and critical civic engagement.

Liu et al. (2023) proposed a novel methodological model designed to analyse how different media outlets interpret and present the same event through cross-article comparison. Their study reveals that even the largest and most prestigious media organizations, often regarded as "*objective*" or "*neutral*," are not immune to ideological bias, which manifests not only in tone but also in the selection and omission of factual content. As they write, "*objectivity in journalism is more of a strategic stance than a neutral position — journalists choose what to consider important and thereby shape the interpretive field*" (Liu et al., 2023, p. 5). The researchers' model uses automated textual analysis to determine which news agencies report on a specific event, what factual details are included or omitted, and how stylistic choices (such as vocabulary, framing, and emotional charge) differ across sources. For example, when several articles cover the same mass protest, one outlet may highlight violence and police response, another may focus on the protesters' legal demands and constitutional rights to assemble, while a third may ignore the event altogether. Liu et al. emphasize that these mechanisms of bias formation are systemic rather than accidental editorial choices. This means that agenda-setting becomes the primary form of ideological influence, while framing determines how an event is interpreted. Differences between editorial lines can be strategically managed through alignment with specific interest groups. Their research underscores that the concept of a "*neutral media*" is often a myth, as "*different media platforms systematically construct different realities, reflecting not just editorial taste but ideological orientation*" (Liu et al., 2023, p. 8). This raises fundamental questions for democratic society: do citizens receive a full, pluralistic spectrum of information, or merely ideologically filtered versions? Such analyses become especially important during election periods, international crises, or pandemics when disinformation and propaganda tactics are most pervasive.

Brooks and Porter (2020) presented a mathematical-informational model for analyzing how media content, particularly journalism, affects ideological dynamics in social media. Their research demonstrates that traditional media continue to exert long-term ideological influence even after publication, through user interactions, sharing, and reinterpretation. Their model simulates the flow of content through user networks, tracking how quickly information spreads, which ideological clusters (e.g., conservative, progressive) it reaches, and how the content's nature influences the views of those clusters. They write, "*the structure of social networks enables information to function not as a neutral flow but as an ideological activator, capable of reinforcing or transforming existing positions*" (Brooks & Porter, 2020, p. 3). One of their key findings is that content with a clear ideological charge, even if seemingly neutral, can, through social interaction, strengthen extreme views. For example, an article about immigration policy published in mainstream media may be interpreted by one group as justification for stricter control, and by another as evidence of a humanitarian crisis. This means that the influence of media content does not end at the point of publication, it continues through social reinterpretation, in which audiences not only consume but actively reconstruct messages based on their ideological expectations. "*Content becomes ideological only when it resonates with social interpretive mechanisms, and these mechanisms are heavily structured by network topology and user attitudes*" (ibid., p. 7). Their model also demonstrates that when media content is shared predominantly within specific ideological communities, a resonance effect emerges in which the information is rarely challenged because it affirms the dominant narrative. Criticism does not occur based on information, but along the lines of identity-based polarization. This poses a challenge to the public sphere in democratic societies, as opportunities for cross-ideological dialogue diminish, and media content becomes an instrument not of informing but of mobilizing. The study also highlights the role of social media algorithms, which do not just optimize for engagement but inadvertently create ideological bubble ecosystems. When a certain type of content becomes popular within an ideological group, algorithms automatically amplify it within that audience, largely ignoring opposing viewpoints. "*Our findings show that traditional media content, once entering social networks, often acquires a second life, no longer as a vehicle of objective reporting, but as a marker of ideological identity*" (ibid., p. 6). Brooks and Porter make an important contribution to contemporary communication studies by integrating data science and ideological analysis. They show that the influence of media content is not just a matter of what is said, but also a function of structural dissemination.

Representatives of discourse theory also provide extensive insight into how media operate as producers of ideology. In his CDA model, Fairclough emphasizes that language is a form of social practice that maintains ideologies. He outlines three levels of analysis: textual, discursive, and social (Fairclough, 2013). From this perspective, media are not merely objects of textual analysis, but institutional entities that shape and sustain dominant viewpoints. For instance, narratives about economic security may be articulated as rational policy frameworks, while silencing alternative perspectives and marginalizing social movements. In doing so, media not only shape public opinion, but also reinforce ideological regimes.

Van Dijk (1993, 2006) argues that the media function as ideological institutions that structure audience cognition through discourse. He highlights that media discourses construct mental models, i.e., representations of social reality, which determine how people interpret the world. This is particularly relevant to economic security, where media narratives can shape perceptions of threat, stability, or crisis. His research shows that ideological structures are often embedded through the use of stereotypes, semantic framing, and selective topic inclusion.

Wodak's discourse-historical approach (DHA) allows for the analysis of how ideological discourses evolve over time and function across various social and political contexts (Wodak, 2015). She emphasizes that media texts must be analysed not only as linguistic units, but as products of historical processes. From her perspective, political and economic changes directly shape media discourse, which in turn influences societal attitudes. Discourse analysis thus becomes a method for deciphering the ideological structures underlying dominant topics, symbols, and narratives in the public sphere.

A theoretical comparison can be made between the perspectives of Fairclough, Van Dijk, and Wodak. Fairclough stresses the social function of language and its capacity to maintain structural power relations. Van Dijk focuses more on cognitive processes, and how they shape ideological models within media discourses. Wodak extends the analysis to the historical dimension, demonstrating how discourses not only structure the present but also draw on narratives from the past. Together, these theories offer a comprehensive understanding of how media function as centres of ideological production. Fairclough contributes the structural angle, Van Dijk provides a psychological lens, and Wodak brings in historical depth. This combined perspective enables a critical understanding of how ideologies are not merely communicated but actively constructed through discourse. It encompasses not only content analysis (language, semantics, visuality), but also structural considerations such as who speaks, in what context, and to what end. Media thus become part of an ideological field in which hegemonic meanings are contested, and discourse serves as the primary instrument in this struggle.

Jäger builds on Foucault's concept of the dispositive and proposes analyzing discourse as a network of power and knowledge that operates through institutional channels such as media (Jäger, 2001). In his view, media are not only sites of discourse but also spaces of materialization, where language becomes institutional practice. Jäger stresses that analysis must include not only the text, but also the structure that produces and distributes it. This includes editorial decisions, ownership interests, and political context. Thornborrow studies how discourse functions in institutional formats, especially in political debates and the media. She argues that language becomes a tool not only for communication, but also for the construction of authority. As she writes, "*institutional discourse defines who may speak, how, and about what*" (Thornborrow, 2002, p. 5). This means that media narratives determine not just content but also hierarchies — who is considered an expert, whose voice is heard, and whose is silenced. Both authors agree that language is not neutral and is tied to power, but while Jäger concentrates on the system that materializes discourse, Thornborrow focuses on the linguistic performance within specific institutional formats, such as debates.

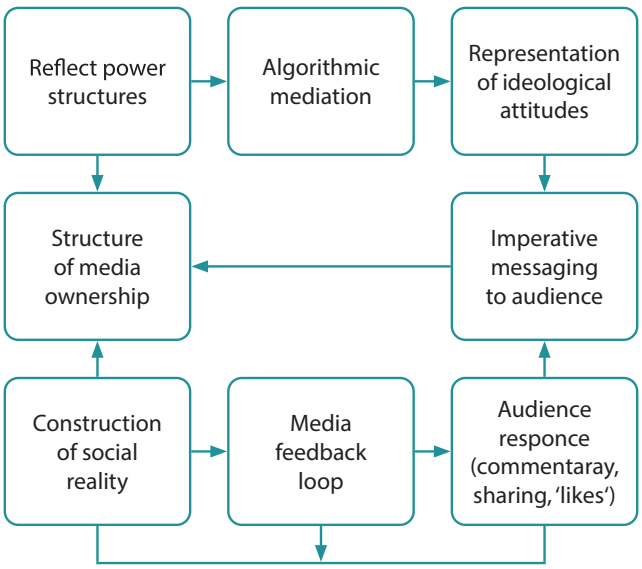


Figure 3. The Role of Media in Constructing Ideology: Interaction between Power, Content, and Audience

Source: compiled by the author

Figure 3 illustrates the operational mechanism through which media participate in the formation of ideology. It highlights eight key components, including the reflection of power structures, algorithmic mediation, imperative messaging, audience reactions, and the influence of media ownership. These elements are presented in a cyclical sche-

matic that reveals how media, through content selection and feedback loops, shape social reality and exert ideological influence. Both traditional and digital media function as powerful instruments in the production of ideology. They do not merely transmit information but also shape societal perspectives, values, and political attitudes. Understanding the role of media in the formation of ideology is essential for critically evaluating received information and maintaining informational literacy.

Typology of Media Outlets: Public versus Commercial. Media systems are classified according to principles of financing, governance, editorial independence, and public accountability. One of the most theoretically and practically significant distinctions concerning ideological dissemination and discourse structure lies in the division between public and commercial media.

Public service media are structurally and normatively oriented toward representing the interests of society. Their primary aim is to provide information that promotes civic awareness, democratic participation, and cultural diversity. According to Hallin and Mancini (2004), public media are more inclined to uphold professional journalistic standards and are less susceptible to political instrumentalization, especially in contexts where independent regulatory mechanisms exist. As they state, "*the strength of public media lies in their institutionalized commitment to reflect societal diversity and to provide information that does not serve merely commercial interests*" (Hallin & Mancini, 2004, p. 152). Jakubowicz (2011) argues that public media constitute a "*normative form of democratic communication*" that is oriented toward balancing interests and decentralizing power. This type of media system is characterized by a "*positive commitment to the public*," which is not driven by market logic but rather by a social contract (Jakubowicz, 2011).

Commercial media, in contrast, are profit-driven, and their editorial decisions often reflect the interests of advertisers, owners, or targeted market segments. Their funding model is based on advertising, subscriptions, marketing strategies, and the commercialization of audience data. McChesney (2008) warns that commercial media are particularly vulnerable to "*commercial bias*" - the tendency to present information that supports the status quo and avoids controversial topics that might reduce advertising revenue or alienate consumers. He observes that "*market logic pushes media to appease rather than to critique, and this distorts their ability to function as a public sphere*" (McChesney, 2008, p. 64). Doyle (2013) adds that commercial media often "*prioritize profitable topics*" over socially significant ones because they operate as market players rather than public intermediaries. This is further elaborated in Table 6, which outlines the structural differences.

Table 6. Structural Differences between Public and Commercial Media

Criterion	Public Media	Commercial Media
Funding	Public taxes, licenses, subsidies	Advertising, subscriptions, sponsors
Editorial Independence	Normatively established, but changing	Depends on ownership structures
Content	Representation of public interest	Monetization of audience attention
Main Function	Democratic participation, education	Profit seeking, market segmentation

Source: compiled by the author

Public and commercial media differ not only in legal-institutional structure, but also in how they construct discourse types, shape public opinion, and reproduce ideological frameworks. According to Curran (2012), public media have a distinct potential to promote ideological pluralism because they are obliged to represent societal diversity, include minority voices, and encourage reflective discourse. In contrast, commercial media, driven by market logic, tend to create a more homogeneous, consumerist, and mainstream ideological environment. As Curran notes, "*commercial media, being dependent on advertising and mass appeal, tend to privilege a depoliticized and individualistic version of reality*" (Curran, 2012, p. 147).

Jin (2015), however, analyses the contemporary platform-based media ecosystem, where the traditional distinctions between public and commercial media are increasingly blurred. Platforms such as YouTube, Facebook, and Instagram no longer conform to the classical definitions of either public or commercial media. They operate as infrastructures in which any entity be governmental, individual, or corporate can disseminate content. Yet the logic of dissemination is governed by algorithmic rules. "*The platform economy transforms the circulation of ideological power: not journalists, but algorithms and data logic determine what is visible, heard, and legitimized*" (Jin, 2015, p. 92). This dynamic implies that the ideological potential of content today is no longer solely the result of editorial intent, but also of technological architecture. According to Couldry and Mejias (2019), platforms create a new type of "*data dispositif*" in which power circulates through surveillance, personalization, and behavioural modelling of users. Moreover, due to platformization, there is a growing presence of self-representational ideologies disseminated by influencers, bloggers, and alternative media channels. This contributes to what is known as ideological fragmentation, where the idea of a shared public

sphere is in decline. As Sunstein (2018) argues, it becomes increasingly difficult for different social groups to engage in mutual understanding when they consume entirely different narrative constructions of reality. This situation poses a new challenge for democracy: when discourse is not only ideologically biased, but also structured by unequal access to visibility, based on user behaviour and the commercial potential of content.

In the last decade, the traditional typology distinguishing public and commercial media has undergone a fundamental transformation due to the rise of digital platforms particularly YouTube, Facebook, TikTok, and Instagram. These platforms no longer conform to classical definitions, as they do not produce content themselves but act as intermediaries. Their algorithms, technical infrastructures, and business models exert direct influence on what is deemed visible, authoritative, and ideologically acceptable. "*Platforms are reshaping the media ecosystem by erasing the boundaries between public and commercial functions. They present themselves as neutral channels but act as powerful editors of media content*" (Van Dijck, Poell, & de Waal, 2018, p. 3). Although platforms like YouTube and Facebook are frequently used for public purposes, for example, government communication, education, or journalism they are not subject to normative obligations to ensure information quality, representativeness, or pluralism in the way public media are. As Couldry and Mejias (2019) put it, "*Facebook functions as a public sphere without public responsibility*."

Unlike traditional editorial offices in public or commercial media, platforms "*edit*" content algorithmically, according to user behaviour, click history, and advertising value. This leads to the prioritization of content based on commercial rather than civic logic. According to Napoli (2019), in the contemporary platform ecosystem, algorithms have become the new editors. They decide what content to show based not on journalistic criteria but on predicted user interaction and advertising revenue. This results in a system where emotionally charged, polarizing content is prioritized, while informative or socially valuable content is often suppressed. Napoli states, "*algorithmic curation systems are structurally biased toward content that provokes engagement rather than reflection*" (Napoli, 2019, p. 63). This shift in editorial power encourages the development of clickbait culture, in which headlines are exaggerated, and content quality is secondary. According to Tandoc (2018), clickbait journalism is often characterized by "*emotional charge, fragmented information, and diminishing source credibility*," which further distorts the information environment. Moreover, algorithm-based platforms do not simply highlight sensationalist content, they also accelerate the spread of disinformation. Just a few minutes of intense user activity can cause false information to go viral. A study by Vosoughi, Roy, and Aral (2018) published in *science* demonstrated that false news spreads faster and more widely than the truth on social networks, primarily because it appeals more to emotions - especially fear and outrage. Furthermore, algorithmic systems make visibility decisions in opaque ways: there are no clear accountability or transparency mechanisms that explain how or why some content becomes more visible than others. As Bucher (2018) argues, algorithmic visibility is a form of social power that shapes the boundaries of knowledge. Napoli's (2019) analysis reveals a profound structural change: editorial authority has shifted from journalistic institutions to algorithms that are not accountable for public information but operate according to commercial principles. As a result, the logic of platform-based media promotes content that is emotionally resonant but informationally unreliable, posing challenges not only for media quality but also for democratic processes.

On platforms, content creators including influencers, vloggers, bloggers, and even independent journalists are increasingly adopting a self-branding model. Their activity is oriented toward constantly maintaining audience attention, increasing likes, followers, and views. Content is developed not according to editorial ethics or public interest principles, but based on data analysis: what worked before, what algorithms promoted, what the audience shared. According to Marwick (2015), platform-based media "*encourage the ongoing commercialization of the self as a strategy of identity*," where personality becomes a product. "*Influencers aim to be seen not just as sources of information but as consumer-attractive brands whose content increasingly aligns with market demands rather than public sphere expectations*" (Marwick, 2015, p. 140). This logic transforms the traditional journalistic model. While content becomes individualized, it remains dependent on algorithms. In other words, even when creators act independently, their visibility is determined not by professionalism or quality but by the structure of platform algorithms. This produces a hybrid regime in which public functions such as informing, criticizing, or explaining merge with the production of commercial value through visibility and monetization. According to Abidin (2018), this platform logic produces a new type of public actor, the "*micro-celebrity journalist*", who lacks traditional editorial protection but still performs an informational function for the masses. This figure navigates constantly between transparency, charisma, and profitability. "*Content creation on platforms increasingly prioritizes emotional resonance and marketing potential over informativeness*" (Abidin, 2018, p. 8). This approach fundamentally changes the media ecosystem. Journalism becomes decentralized, editorial filters weaken, and responsibility for the impact of content is often shifted to the audience. On the one hand, this broadens the range of voices in the media. On the other, it fragments the public sphere into personal channels where critical discourse frequently loses out to self-promotion and algorithmic visibility.

Table 7. Media Typology

Criterion	Public Media	Commercial Media	Platforms (YouTube, Facebook)
Content	Public interest	Audience profitability	Mixed (audience + algorithms)
Editing	Professional	Profit-dependent	Algorithmic, automatic
Accountability	Normative	Commercial	Limited, self-regulated
Ideological Impact	Pluralistic	Possible bias	Indirect, fragmented, personalized

Source: compiled by the author

Table 7 compares the three main models of media - public, commercial, and platform-based. They are compared according to four key criteria: content orientation, editorial governance, type of accountability, and form of ideological influence. Content orientation reflects the principles by which media content is shaped, whether oriented toward public interest (public media), market profitability (commercial media), or a hybrid, personalized model shaped by algorithms (platforms). Editorial governance indicates who controls content selection and distribution, either professional editors, economic interests, or automated algorithms. Accountability concerns whether an institution is answerable to the public for the consequences of its content. Public media operate based on normative responsibility; platforms rely solely on self-regulation. The ideological influence dimension analyses how each system shapes discourse. Public media tend to support pluralism, commercial media often reflect elite interests, while platforms fragment discourse through personalization. The table demonstrates that platforms introduce a hybrid model in which the traditional boundary between public and commercial functions disappears. Their ideological influence is indirect yet systemic, it is shaped by algorithmic mechanisms and patterns of user interaction.

The analysis of the typology of public and commercial media is closely linked to the aim of the monograph and its second objective. The study of different media models, both public and commercial, makes it possible to reveal how various institution's structure economic security discourses and what semantic and ideological directions they produce. Public media, oriented toward representing the public interest and upholding normative objectivity, more frequently support pluralistic and critical representations of economic threats. Commercial media, which operate according to market logic, often encourage more emotionally charged and polarizing narratives that reinforce a sense of insecurity and promote a consumer-driven perception of risk. This distinction is particularly significant for fulfilling the second objective of the monograph, which is to develop the theoretical foundation of media power and the methodology of discourse analysis based on Foucault's concept of power and knowledge and on the principles of critical discourse analysis. Typological media analysis allows for the empirical validation of the thesis that media, operating within different structural environments, implement different mechanisms of ideological influence. Public media aim to support democratic information, while commercial media tend to contribute to the strengthening of ideological frameworks grounded in market values. Moreover, this subsection contributes to establishing the relevance of the monograph by showing that economic security narratives are not accidental but are shaped by structurally determined communicative logics that influence public trust in institutions, emotional stability, and civic engagement in different ways. Understanding the differences in discourse between public and commercial media makes it possible to more precisely analyse the channels and forms through which the concept of economic security is communicated in the public sphere, thereby contributing to the achievement of the theoretical and practical objectives of the monograph.

Discourse Analysis Methods (Critical, Semantic, Quantitative). The study of economic security discourses requires methodological flexibility and a multi-level analytical perspective. In this context, discourse is understood not only as linguistic expression but also as a form of social practice through which public understanding of threats, trust in institutions, and perceptions of national security are shaped. Therefore, it is essential to examine not only the textual content, that is, vocabulary, syntax, metaphors, and narrative structures, but also the broader discursive context, including power relations, ideological frames, audience reception, and the logic of media dissemination. This section outlines three analytical methods: critical discourse analysis (CDA), semantic analysis, and quantitative discourse analysis. They will be applied to systematically examine how narratives of economic security are constructed in Lithuanian public and commercial media. The selection of these methods is based not only on their theoretical suitability but also on their capacity to integrate qualitative and quantitative dimensions through the principle of triangulation. Critical discourse analysis enables the identification of how social power structures are embedded in language, what ideological narratives dominate, and how these relate to broader political and economic contexts. Semantic analysis reveals deeper structures of meaning, including metaphors, oppositions, and semantic fields that shape conceptions of threat and security. Quantitative analysis provides an objective evaluation of the most frequently occurring themes, word usage patterns, topic distributions, and structural dynamics of discourse over time. By applying these methods together, the study aims not only to identify how economic security is discussed but also to uncover why certain forms of language

become entrenched in specific media environments, for example, how editorial, political, or technological structures (such as algorithmic filters) contribute to the dominance of particular discursive forms. This integrated methodological approach allows for a well-founded assessment of the media's role as a producer of ideology and supports the overall aim of the monograph: to reconstruct the logic of economic security discourse in contemporary Lithuania.

Critical Discourse Analysis is based on a poststructuralist conception of language, where discourse is not seen as a neutral reflection of reality but as an active mechanism for constructing social reality. One of the core theoretical foundations of CDA is Michel Foucault's concept of power and knowledge, which asserts that knowledge always functions within and through power structures (Foucault, 1980). In this view, language operates not only as a means of communication but also as a tool of discipline and normalization, through which truths, subjectivities, and social roles are produced. According to Fairclough (2013), CDA analyses discourse as a dialectical relationship between three dimensions: the textual level (wording, syntax, stylistic choices), discourse practice (production, distribution, and consumption of text), and social practice (the wider ideological, institutional, and cultural context). This triadic model enables the study of discourse as a dynamic process in which meanings are shaped by institutional powers but can also serve as instruments of resistance. As Fairclough notes, "*discourse analysis must be oriented toward examining how language functions within fields of power, how it shapes subjects, and how it legitimates institutional actions*" (Fairclough, 2013, p. 45). In this monograph, CDA will be used to evaluate how media discourses contribute to the formation of narratives about fear, risk, or trust, and to reveal the institutional and ideological forces behind them. The analysis will focus on how media texts represent economic threats (such as inflation, energy dependency, or geopolitical challenges), and what semantic strategies (including polarized oppositions, metaphorical framings, and nominalizations) are used to consolidate worldviews. This analysis will be supplemented by Jäger's dispositif analysis method (Jäger, 2001), which extends Foucault's theory into the field of media studies. Jäger argues that in order to analyse discourse in modern societies, one must consider its material form, i.e., media platforms, ownership structures, editorial policy, design, visual communication, and other conditions that determine which discourses become possible or dominant. In other words, the dispositif includes not only linguistic elements but also social, technical, and economic mechanisms that sustain discursive circulation. "*Discourse is not merely text or speech. It materializes through institutions, technologies, media, and visual codes. Only through the interaction of these elements does discourse become effective*" (Jäger, 2001, p. 45). The critical analysis in this study also draws on Wodak's (2015) discourse-historical approach, which emphasizes that the meanings of discourse inevitably change over time and context. Researchers must therefore reconstruct the historical and political background of the narratives. As Wodak writes, "*discourse-historical analysis seeks to understand not only what a text means, but why it means what it does in a specific time and space*" (Wodak, 2015, p. 31). This is particularly important in examining how economic security discourses have evolved in response to geopolitical crises, energy shocks, and the COVID-19 pandemic. CDA will serve as the main qualitative method in this study, providing the tools to reconstruct the ideological logic of media discourse, reveal embedded power relations, and uncover how language constructs our collective understanding of economic security.

Semantic Discourse Analysis allows us to identify how language shapes models of world perception, evaluative judgments, interpretations of threat, and ideological frames of opposition. This method focuses on the analysis of meaning structures, including word semantics, connotative fields, metaphorical patterns, evaluative vocabulary, and recurring oppositions that serve to construct symbolic boundaries between "*us*" and "*them*," between security and threat, between order and chaos. Semantic clusters often structure discourse in such a way that they become invisible ideological assumptions, presenting social phenomena not as neutral facts but as normative choices. As Wodak (2015) notes, metaphors in discourse are not merely rhetorical or aesthetic devices, they "*structurally determine the perception of the world*" and function as cognitive models that help audiences quickly grasp complex situations, while simultaneously limiting alternative modes of interpretation. In this monograph, semantic analysis will be used to identify:

- evaluative vocabulary (appraisal language) - adjectives, nouns, and verbs carrying strong positive or negative semantic weight (e.g., "aggressive attack," "meticulous control," "weak policy");
- metaphors that conceptualize abstract processes through concrete, often militarized or naturalized imagery (e.g., "economic front," "wave of inflation," "financial storm"). As Wodak notes, "metaphors are not simply stylistic elements, they fundamentally shape worldviews" (Wodak, 2015, p. 31);
- semantic oppositions - binary structures of meaning (e.g., "stability / chaos," "progress/disorder") commonly used in political discourse to legitimize decisions or delegitimize others.

According to Musolff (2016), one of the most powerful ideological devices in discourse is the scenario-based metaphor, in which a metaphor operates as a mini-narrative. For example, migration processes may be portrayed as a "*flood*," or an economic crisis as a "*disease*" or "*war*," thus invoking implicit agents, causes, and outcomes. Such metaphors not only trigger emotional evaluation (such as fear or outrage), but also restrict the range of political responses. If an economic

crisis is a "*war,"* then policy responses are framed as "*defence*," "*mobilization*," "*sacrifice*," or "*battle*," eliminating space for nuanced debate. This is especially relevant for analyzing how media portrayals of economic security evolve during times of crisis. Semantic analysis also helps identify discourse nodes, i.e., points where multiple meanings converge. For instance, when economic terminology acquires geopolitical significance e.g., when "*energy independence*" is presented as a matter of national security), or when a social issue is reframed as a moral threat (e.g., "*unemployment as a threat to order*"). Semantic analysis in this study will aim to identify not only isolated words or phrases but also broader ideological meaning structures that, through metaphors, evaluations, and oppositions, give shape and emotional impact to discourses of economic security.

Quantitative Discourse Analysis is a method that enables the systematic and objective examination of large corpora of texts to identify recurring discourse patterns, dominant themes, and their temporal dynamics. This method is especially useful when analyzing media texts, as it makes it possible to determine how frequently and in what context certain topics or concepts are mentioned, and how they change depending on social or political events. According to Aranda et al. (2021), digital content analysis allows for "*the combination of quantitative systematicity and qualitative interpretive depth*" in discourse research, providing the means not only to measure features of the content but also to interpret their meanings and contexts. This analysis focuses on quantitatively assessing content such as word frequency, repetition of common themes, and the statistical structure of thematic fields. It enables the identification of dominant discourses (the most frequent words and topics), the observation of thematic dynamics over time (for example, the salience of economic security before and after moments of crisis), and the visualization of discourse structures using network or word-cloud models. This method is particularly valuable when the research objective is to detect systemic patterns within a large body of texts. The quantitative method in this study will be applied to a corpus of texts from LRT, Delfi, and 15min, using word frequency analysis, semantic networks, and topic mapping.

The combination of the methods discussed enables a triangulation effect. Analyzing discourse from multiple perspectives, thereby ensuring the reliability of interpretation and theoretical depth. Critical analysis reveals the ideological structure, semantic analysis identifies clusters of constructed meaning, and quantitative analysis captures systematic patterns of frequency and recurrence. The chapter "*The Theory of Media Power and Discourse Analysis*" provides the theoretical and methodological foundation for the study of economic security discourses, closely linking media analysis to the concepts of power and ideology. Drawing on the insights of Foucault, Fairclough, Van Dijk, Wodak, Jäger, and others, the chapter establishes that media are not neutral instruments of knowledge dissemination but ideological institutions that structure discourse, legitimize specific power configurations, and shape social reality. The theoretical approaches such as critical, genealogical, cognitive, and dispositive allow economic security narratives to be viewed as discursive constructs formed not only at the textual level but also within institutional and political structures. The section on media typology (public vs commercial and platform-based) is directly linked to the goal of the monograph, i.e., to examine how different media forms construct economic security discourses as well as to the second research objective, which is to establish the theoretical and methodological framework for discourse analysis by drawing on Foucault's concepts of power and knowledge and the principles of critical discourse analysis. This analysis demonstrated that different media structures shape distinct models of ideological influence: public media are more likely to support a pluralistic agenda, commercial media tend to promote market-based selection of narratives, while platform media transform classical typology through algorithmic and personalization logics. The methodological model of discourse analysis (critical, semantic, and quantitative) has been developed in such a way as to enable the empirical study of what kinds of narratives about economic security prevail in public and commercial media texts, what emotions they generate, and what semantic and visual strategies they are based on. This methodological framework is directly oriented toward the third chapter, which will present empirical analysis of the media based on material from LRT, Delfi, and 15min from the period 2020 to 2024. That chapter will serve as a field for the practical verification of the theoretical insights discussed here, allowing for an examination of how discourse theory and media typology manifest in specific examples of communication.

The Discourse of Economic Security in Lithuanian Media (2020–2024)

Typology of Economic Security Narratives in the 2020–2024 Period. The typology of narratives was refined based on the previously discussed methodology of critical discourse analysis (Fairclough, Jäger, Wodak), which enables the identification of ideological elements in discourse that relate to power relations, the production of knowledge, and the maintenance of social order. Each narrative was analysed as a textual-social construct, possessing semantic, pragmatic, and institutional structure. Through semantic analysis, evaluative elements were identified (e.g., "*crisis*", "*resilience*", and others; see Table 8), along with metaphorical models (e.g., "*economic salad*", "*poverty epidemic*"; see Table 9), and oppositional structures ("*us / them*", "*stability / chaos*"), which help to reveal how media shape the architecture of meaning in the world. A quantitative discourse analysis method was also employed to identify dominant thematic

fields, word frequencies, and fluctuations in topic intensity during periods of crisis (e.g., the COVID-19 pandemic, the war in Ukraine, the energy shock). This methodological integration made it possible to systematically classify the narratives, disclose their functional differences, and determine how media typology influences discourse structure. The presented typology of narratives is not merely descriptive, but is an empirically grounded methodological output. It forms the conceptual foundation for further analysis, which will examine how specific narratives are distributed across various media platforms and their ideological impact on society.

Table 8. Evaluative Elements in Lithuanian Media Narratives (2020–2024)

Evaluation Elements	Citations
Crisis	**LRT:** "*Egg crisis in the US: twelve-egg carton costs up to ten dollars.*" **Delfi:** "*Crises may be economic, financial, political. A pandemic or war is also a crisis.*" **15min:** "*Financial crisis (economic crisis) is a situation where financial institutions or assets rapidly lose value.*"
Resilience	**LRT:** "*Resilience is an integral part of the ongoing transformation in the energy sector.*" **Delfi:** "*Resilience ensures the design of information systems that allow quick recovery after incidents.*"
Aggression	**LRT:** "*Russia's aggression against Ukraine has caused major geopolitical instability in the region.*" **Delfi:** "*Economic aggression manifests in trade restrictions and sanctions that pressure national economies.*" **15min:** "*Cyber aggression is becoming more frequent, with states using technology to disrupt other countries' infrastructure.*"
Threat	**15min**: "*The Russian military threat. The growth of Russia's military power will depend on the course of the war in Ukraine.*"; "*Ieva Voveris faces the risk of losing Lithuanian citizenship: she reveals what steps she will take next.*" **Delfi**: "*There is no need to instil fear or panic, but it must be stated honestly that a threat does exist,*" said the First Deputy Speaker of the Seimas, former Minister of National Defence, and Social Democrat Juozas Olekas.
Stability	**Delfi**: "*Stability and intense competition in the economy: the minimum wage raises concern.*" "*When the new Government took office at the end of last year, it declared that its primary goal would be to establish political stability.*" **15min**: "*Lithuania's financial stability situation improved over the past year.*" **LRT**: "Economic stability is an important factor in ensuring the well-being of the population and social cohesion." "*Political stability enables the government to implement reforms more effectively and ensure the country's long-term development.*" "*Climate stability is essential for avoiding extreme weather conditions and their negative impact on the environment and the economy.* "
Independence	**15min**: "*Having delivered energy independence to Lithuania, Independence became a source of inspiration and a model for the entire region.*" **LRT**: "*When Lithuania restored its independence on March 11, 1990, this was inseparable from economic reforms, as they paved the way for the introduction of a market economy.*" "*Lithuania aims to use 100 percent renewable energy by 2050, with a national priority of reducing dependence on Russian energy sources.*" "*Economic independence means higher wages than in Germany.*"
Security	**15min**: "*Cybersecurity is an area where each individual's actions influence overall security. Even a single person's carelessness or a data leak can lead hackers to access even more sensitive information.*" **Delfi**: "*A new challenge for Lithuania's security arises due to the presence of U.S. troops: Kasčiūnas urges preparedness.*" **LRT**: "*Cybersecurity is becoming increasingly important as more aspects of our lives shift into the digital realm.*" "*Psychological safety in the workplace fosters employee creativity and innovation.*"
Risk	**LRT**: "*Banking and investment are inherently risky enterprises.*" **Delfi**: "*By responsibly diversifying one's investments, both short-term and long-term risks can be managed.*" **15min**: "*Short-term investment should involve lower risk.*"

Evaluation Elements	Citations
Trust	**LRT**: "*Customer trust is a significant asset for electronic money and payment institutions.*" "*If we have a growing economy, we will have strong defence, and we will be protected not only by collected taxes but also by investor confidence.*" **15min**: "*This indicates that investors are satisfied and that their confidence in the platform is increasing due to its stability and the monthly interest payments.*"
Investment	**LRT**: "*Initial investments made with small amounts help individuals learn from mistakes and assess their own acceptable level of risk.*" **Delfi**: "*Postponed or even cancelled investments can reinforce the trend of economic slowdown.*" **15min**: "*Nearly half (47 percent) of the population report lacking sufficient savings, and one-third say that a lack of knowledge has held them back from starting to invest.*"

Source: compiled by the author

Table 9. Metaphorical Models in Lithuanian Media Texts (2020–2024)

Metaphor	Citations
Economy as an organism	**Delfi**: "*Lithuania's economy is currently ailing, observes Akmenės cementas CEO Artūras Zaremba, referring to cement sales as an indicator.*"
The engine of the economy	**Delfi**: "*Transport and logistics represent a highly significant economic driver, generating approximately 11 percent of Lithuania's gross domestic product.*"
Poverty as an epidemic	**Delfi** (Raimonda Mikučionytė): "*The poverty epidemic is spreading.*"
Tax burden	**Delfi** (Reda Simonaitytė-Mikulė): *"(...) the tax burden does not constrain economic activity, distort incentives, or encourage the shadow economy.*"
Foundation of the economy	**Delfi** (Robertas Dargis): *"(...) people's creativity and entrepreneurial spirit are the foundation of a nation's economy.*"
Progress as an uncontrollable tiger	**Delfi** (Tomas Kačerauskas): "*Progress is a tiger on whose back we are rushing headlong into the unknown; we cannot stop, because the tiger would devour us.*"
Energy dependency as being tied to a pipeline	**Delfi** (Andrius Kubilius): "*In the energy sector, we were once tied to Greater Moscow by two cables and a single pipeline—and we still are to this day.*"
Earth as a silent creditor	**Delfi** (Ieva Budraitė): "*The Earth is like a silent creditor. It does not issue paper invoices, but it sends signals.*"

Source: compiled by the author

The accompanying pie chart (see Figure 4) visualizes the distribution of the main economic security narratives in Lithuanian media (LRT, Delfi, 15min) during the 2020–2024 period. It clearly shows that the threat narrative is dominant, while the narratives of stability, individual responsibility, enemy identification, and sustainability all play additional yet significant roles in public communication. These narratives structure how society understands economic threats, the responsibility of the state, the effectiveness of individuals, and the geopolitical context. They serve not only an informative function but also emotional and ideological framing functions, often conveyed through metaphors (as in Table 9), dichotomies, and evaluative language (as seen in Table 8).

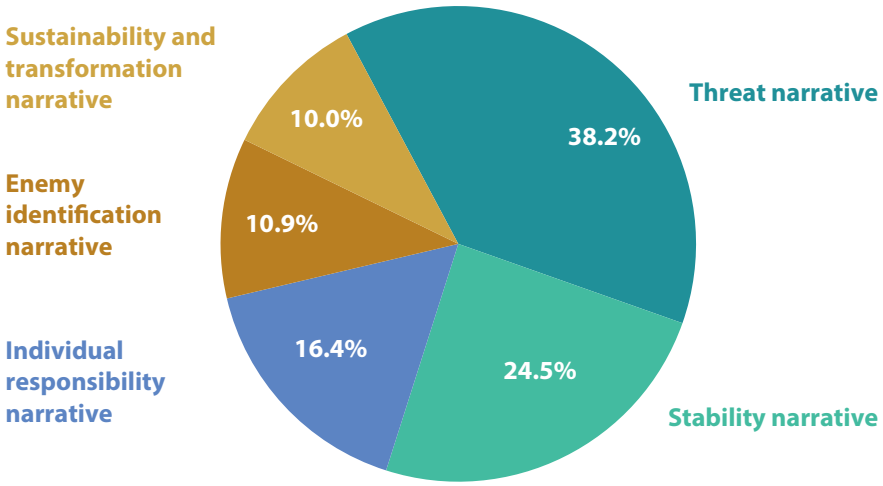


Figure 4. Distribution of Five Main Economic Security Narratives in Lithuanian Media (LRT, Delfi, 15min) during 2020–2024

Source: compiled by the author

The economic security narrative chart was developed by conducting both qualitative and quantitative content analysis of media coverage, following these methodological steps:

Source selection: The analysis focused on three major Lithuanian news portals: LRT.lt (a public broadcaster forming the official discourse), Delfi.lt (one of the most popular commercial news sites), and 15min.lt (a source known for investigative journalism and analysis). The examined articles were published between 2020 and 2024 and addressed economic security topics such as inflation, state support, energy, pandemic consequences, national finances, and the war in Ukraine.

Thematic coding framework: Based on media studies and discourse analysis principles, a typology of narratives was established. Each narrative was defined according to recurring semantic and rhetorical motifs. For instance, the threat narrative emphasizes crisis, danger, external pressure, and economic disruptions.

Article analysis: Each article was coded by its dominant narrative. The coding was performed by the author of the monograph following a consistent coding manual. If multiple narratives appeared in a single article, the one most prominent in volume and tone was recorded.

Data processing: The frequency of each narrative was tallied and converted into a percentage of the total number of analysed texts. The resulting numerical distribution is presented in the form of a pie chart. One limitation is that the data reflect an approximate distribution based on human interpretation rather than automated analysis.

The visualization is based on a total of 112 articles drawn from the three Lithuanian media outlets (LRT, Delfi, and 15min), published between 2020 and 2024. Their distribution across the narratives is presented in Table 10.

Table 10. Distribution of Economic Security Narratives across 112 Articles (Three Portals: LRT, Delfi, and 15min)

Type of Narrative	Number of Articles	Percentage (%)
Threat narrative	43	38.4
Stability narrative	27	24.1
Individual responsibility narrative	18	16.1
Enemy identification narrative	12	10.7
Sustainability and transformation narrative	12	10.7

Source: compiled by the author

Based on the texts published in Lithuanian media (LRT, Delfi, and 15min) between 2020 and 2024, five dominant types of economic security narratives can be distinguished: the threat narrative, the stability narrative, the individual responsibility narrative, the enemy identification narrative, and the sustainability and transformation narrative. These will be described in more detail below.

The topic of economic security in Lithuanian media between 2020 and 2024 is frequently developed through the threat narrative, where emphasis is placed on uncertainty, external risks, and internal vulnerabilities (see Table 11). This narrative is grounded in both quantitative economic indicators (such as inflation rates, GDP changes, and energy prices) and metaphor-rich language that helps convey the complexity and danger of economic challenges.

All three portals - LRT, Delfi, and 15min, regularly highlight the uncertainty of the economic situation. This discourse element is especially prominent in discussions of inflation, energy prices, and the reliability of forecasts. LRT articles often underscore economic uncertainty related to projections, inflation dynamics, and energy market volatility. Uncertainty is framed as a persistent background condition that complicates rational decision-making. For example, one article states: "*Inflation in Lithuania remains one of the highest in the European Union, and the pace of decline is slow. This raises concerns among both residents and businesses*" (LRT.lt, June 15, 2023). A similar message appears in the context of energy: "*Fluctuating energy prices and geopolitical tensions affect economic stability, making it increasingly difficult to predict the future*" (LRT.lt, September 10, 2022). These formulations show that the media do more than convey facts — they cultivate an emotional framing in which the economic future is perceived as unreliable and unpredictable. Delfi echoes this tone: "*Economic forecasts are unprecedented — no one can say with certainty what awaits us in three months*" (Delfi.lt, October 1, 2022). 15min conveys uncertainty through expressions such as "*economic storm*" or "*inflation front,"* which reinforce the idea that economic processes are difficult to foresee and potentially dangerous.

A second key focus is external risks. This aspect is closely associated with geopolitical tension (especially in the context of the war in Ukraine), supply chain disruptions, energy dependency, and global price surges. For example, an LRT article from March 5, 2022, states: "*Russia's war in Ukraine and the sanctions imposed on Moscow have triggered shocks in the global economy that directly affect Lithuania*." This quote suggests that external factors not only threaten but also significantly limit the country's sovereign ability to manage its economic processes. 15min also examines the raw materials crisis, the impact of the pandemic on supply chains, and reliance on imports: "*The global raw materials crisis has impacted Lithuania's entire manufacturing sector - energy costs and logistics prices have risen like an avalanche*" (15min.lt, November 10, 2022).

The third focal point is internal vulnerability, frequently connected to social inequality, the financial fragility of small businesses, and structural instability. According to LRT: "*Rising social exclusion and income inequality in Lithuania could lead to long-term economic and social challenges*" (LRT.lt, January 12, 2023). Another publication emphasizes the vulnerability of the business sector: "*Small and medium enterprises are facing financial difficulties due to increasing costs and an uncertain market environment*" (LRT.lt, October 8, 2022). Delfi presents a similar view: "*Small and medium enterprises are encountering financial challenges caused by rising expenses and a volatile market*" (Delfi.lt, October 8, 2022). 15min adds: "*Start-ups in regional areas are left to fend for themselves, municipalities lack the financial and human resources to support them*" (15min.lt, April 5, 2023). These quotes illustrate how economic insecurity is articulated not only through external crises but also through domestic constraints, particularly a fragile system that is highly sensitive to external shocks.

In Lithuanian media discourse, economic security is not presented as a stable or neutral phenomenon. On the contrary, it is framed through a logic of threat, where constant tension between risk and vulnerability prevails. This structure of discourse serves not only to inform but also to shape public perception of economic reality, encouraging caution, anxiety, and a heightened need for security. The three major Lithuanian news portals LRT, Delfi, and 15min systematically construct the threat narrative in their coverage of economic security, relying on shared semantic frames. All three emphasize uncertainty, external risks, and internal fragility. Within this rhetoric, metaphors such as "*storm*", "*front*", and "*blow*" dominate, along with expert assessments imbued with emotional intensity.

The dominant threat narrative is actively constructed through metaphorical models. These metaphors portray economic processes as physical, menacing, or even militarized phenomena that shape not only informational but also emotional and political discourse. The study identified three main metaphorical categories: those of physical force, natural disasters, and military conflict. In the analysis of media texts, the most frequently recurring metaphors were "*crisis blow*", "*inflation front*", and "*economic storm*". All of these metaphors depict economic processes as forceful, threatening, and at times militarized. For example, economist Mauricas stated: "*The conflict between Ukraine and Russia continues, the energy war between Russia and the EU is ongoing, and now a third front has opened in the food sector*" (Delfi, June 25, 2022). This reveals how economic threats are framed as a multifront conflict in which defence and strategic action are necessary. Military metaphors are also found in LRT's language choices, such as the use of terms like "*stockpile plan*", "*strategic reserve*", and "*defence plan*". In LRT's publications, economic decisions are described using military terminology. For instance, when discussing energy security, concepts such as "*strategic reserves*" and "*defence plans*" are employed, suggesting that economic actions are part of a broader defence strategy. This strengthens the perception that economic challenges require not only financial, but also strategic and defensive responses. Although the word "*front*" is not always stated explicitly, military semantics reinforce the intersection between economic and national security. In his article titled "*Lithuania's Eastern Border or the Eastern Front of a Civilizational War?*" (LRT, August 14, 2023), Vytautas Bruveris describes Lithuania's eastern frontier as a "*civilizational border*" which "*has long ceased to be just a metaphor*". This metaphor conveys the geopolitical tension between democratic and authoritarian regimes, emphasizing that economic and security challenges are inseparable from a broader civilizational conflict. Bruveris argues that "*the world is once again returning to a confrontation between two major camps*" and that "*the war in Ukraine is only one of its fronts, with several*

more likely to emerge and ignite in the near future". While military metaphors are most clearly expressed in Delfi, their implications are present in other media sources as well.

The metaphor of the "*economic storm*", a natural disaster metaphor, is widely used across all three portals. It portrays the economic situation as an uncontrollable natural phenomenon that approaches, strikes, or destroys. Delfi writes in its analysis: "*Europe's energy crisis may continue until the end of 2023, as the region grapples with strong demand and insufficient supply*" (Delfi, September 27, 2022). LRT presents a hyperbolic metaphorical form: "*This is a perfect storm*," says the head of the National Bank of Ukraine about the war's impact on the economy (LRT, June 15, 2023). Also: "The last rays of sun before the storm" (LRT, July 25, 2020), here the sense of an approaching economic crisis is conveyed. Articles in 15min are dominated by visual imagery such as: "*Threatening clouds of economic storm are gathering over Turkey's economy*" (15min, May 15, 2022). Storm metaphors function in two ways: they convey a sense of inevitability and at the same time dehumanize the phenomenon, it is presented as an external, "*natural*" factor whose impact can only be endured but is difficult to control. These metaphors create an atmosphere of instability, prompting either preparedness or passive waiting. Similarly, the metaphor "*economic storm*" is used in the context of the energy crisis: "*Europe's energy crisis may continue until the end of 2023, as the region grapples with strong demand and insufficient supply*" (Delfi, September 27, 2022). This metaphor constructs a sense of instability, evoking the image of a looming disaster that is hard to predict or manage. Meanwhile, the phrase "*crisis blow*" conveys economic threat as a sudden and physical impact. For example: "*The energy crisis, hitting hard, will affect investment flows*" (Delfi, September 27, 2022). The metaphor "*crisis blow*", a metaphor of physical impact, is most found in Delfi and 15min. For instance, Delfi writes: "*The energy crisis, hitting hard, will affect investment flows*" (Delfi, September 27, 2022). 15min publishes a comment from the International Monetary Fund: "*The crisis blow to Lithuania was softer compared to other countries*" (15min, June 10, 2021). On the LRT portal, this metaphor takes an even more emotional form: "*The rise in interest rates is a punch to the gut for households and businesses*" (LRT, April 12, 2023). These metaphors create an image of the crisis as a bodily injury, not just a destabilizing economic phenomenon but a personal ordeal that heightens the perception of threat and strengthens emotional reaction.

In all three portals Delfi, LRT, and 15min the discourse on economic security is shaped through metaphors that depict crises as physical forces, natural disasters, or military conflicts. These metaphors not only convey the complexity of economic processes but also intensify the emotional tone of the discourse. They mobilize the audience, frame political responsibility, and heighten the perception of threat. This type of discourse aligns with George Lakoff's (2014) assertion that metaphors "*structure how we think, act, and what we consider to be reality,*" and with Buzan's (1991) concept in security studies that threat is not merely an objective phenomenon but also a linguistic and political construction. Although the articles often rely on experts and statistical indicators, the emotional intensity arises from language, metaphorical imagery constructs a reality in which economic security is constantly on the edge of threat. This not only amplifies the individual sense of insecurity but also reinforces the collective impression that the state or society is being affected by forces that are difficult to control. In this way, the threat narrative serves not only a representational but also a performative function, it does not merely describe but also mobilizes, calls for reaction, urges caution, and prepares for the worst (see Table 11). At the same time, the media becomes not just a channel for transmitting information but an active producer of the discourse of economic insecurity.

Table 11. Structural Features of the Threat Narrative in Lithuanian Media (2020–2024)

Structural Features	Description
Core theme	Uncertainty due to inflation, the energy crisis, and geopolitical tensions. Risk frames dominate across all portals.
Actors	Citizens and businesses (victims), the government (reactive or weak), external factors (e.g., Russia, consequences of war) as sources of threat.
Plot	Crises are presented as inevitable or already occurring, pressuring the state and society to respond.
Temporal dimension	The discourse is based on constant tension: past shocks (COVID, war), current instability, and uncertainty about the future.
Value judgement	Economic challenges are portrayed as dangerous and destabilizing, posing an existential threat.
Metaphors / rhetorical devices	Military ("*inflation front*"), natural ("*economic storm*"), and physical ("*crisis blow*") metaphors are most common in LRT, Delfi, and 15min publications.
Implied solution	Although few explicit proposals are given, the texts imply the necessity to prepare, strengthen reserves, and pursue energy independence.

Source: compiled by the author

The discourse of economic security in Lithuanian media, especially on the LRT portal, during the period 2020 to 2024 is shaped not only by the rhetoric of threat. Alongside it, a stability narrative also emerges which aims to highlight the state's ability to respond to economic challenges in a responsible manner. This narrative is constructed through specific vocabulary such as "*state reserve*", "*support package*", and "*responsible governance*". Functionally, it serves as a means of reinforcing public trust and is intended to reassure the audience during times of crisis (see Table 12). A 15min article on medical aid to Ukraine states: "*Assistance to Ukrainians is being sent both from the state reserve and from the available resources of the Ministry of Health*" (15min.lt, February 28, 2022). This quote reveals that the state reserve is an important tool for delivering urgent assistance during crises and underscores the state's preparedness and responsible resource management. Discussions about the importance of reserves and shortcomings in their administration emphasize the need to integrate this topic into national security strategies and to strengthen the state's readiness for future crises. The stability narrative in Lithuanian media, particularly in LRT and 15min, during the 2020 to 2024 period, was shaped through an emphasis on the state's preparedness and its capacity for responsible response to crises. The concept of the state reserve became one of the central pillars of this narrative, both in the context of the pandemic and the war in Ukraine. The publications operate as platforms for public policy critique and recommendation, encouraging a review and enhancement of the mechanisms used to manage state reserves. In discourse, the reserve becomes a symbol of state responsibility, preparedness, and protection of the population.

During the COVID-19 pandemic, the media frequently addressed topics related to state support for businesses and residents. For example, an LRT commentary states, "*Business requests have already been heard by many governments. More generous or more modest, better or worse-prepared support plans for businesses are being developed, and there is wide discussion about the quality of these plans*" (LRT.lt, April 15, 2020). This text reflects the efforts of the public sector to respond systematically to challenges by communicating the activity of institutions, their ability to plan, and to consider the most effective interventions. A Delfi publication on state support for businesses during the pandemic states, "*The funds foreseen in the first business support package are gradually reaching businesses*" (Delfi.lt, February 21, 2021). This quote illustrates how the term "*support package*" is used to describe the financial assistance provided by the state to mitigate the effects of the pandemic. An analysis of media discourse during the COVID-19 period shows that the term "*support package*" became a key element of the stability narrative, conveying the state's capacity to respond to economic challenges. Both LRT and Delfi publications demonstrate consistent communication about the public sector's efforts to ensure systematic support for businesses and the population. This kind of vocabulary affirms the values of institutional responsibility, planning, and solidarity, reinforcing trust in the decisions made by the state in times of crisis.

In LRT publications, the rhetoric of "*responsible governance*" is used when discussing the state budget and fiscal policy. This rhetoric emphasizes the efforts of government institutions to ensure financial stability, social justice, and economic growth. LRT articles often stress that the state budget is planned responsibly to maintain fiscal discipline and ensure sustainable economic growth. For example, a 2022 article on the budget proposal states, "*The government emphasizes that the budget proposal has been prepared in accordance with the principles of fiscal discipline in order to ensure sustainable management of public finances*" (LRT.lt, October 15, 2022). This quote reflects the government's aim to manage public finances responsibly, in accordance with established fiscal rules and with a view to long-term economic stability. LRT publications also emphasize that responsible financial management includes reducing social exclusion. For instance, a 2021 article on social policy measures states, "*The government seeks to ensure social justice, which is why the budget allocates more funds for social benefits and support to vulnerable groups*" (LRT.lt, September 10, 2021). This citation shows that responsible governance is not limited to fiscal discipline but also includes ensuring social welfare through appropriate distribution of financial resources. In LRT publications, the rhetoric of responsible governance is also used in reference to the government's response to economic challenges such as the pandemic or inflation. For example, a 2020 article on economic stimulus measures states, "*The government is taking responsible actions to mitigate the impact of the pandemic on the economy, including support packages for businesses and residents*" (LRT.lt, April 20, 2020). This quote highlights that responsible governance includes the ability to respond quickly and effectively to unexpected economic challenges to protect the country's economy and the wellbeing of its population. In a 15min article on the European Commission's assessment, it is stated that Lithuania's budget proposal essentially aligns with the Council of the European Union's recommendations, emphasizing responsible management of public finances: "*Also taking into account the risks, the responsible management of public finances, the relevance of the measures to address the consequences of COVID-19, and their necessity are emphasized*" (15min.lt, November 19, 2020).

The quote reflects the efforts of government institutions to manage public finances responsibly, in accordance with established fiscal rules and with the goal of ensuring long-term economic stability. A Delfi publication on the role of municipal auditors highlights their responsibility for ensuring the transparency and efficiency of financial operations: "*The municipal auditor is one of the key public servants responsible for ensuring the transparency and efficiency of a municipality's financial operations*" (Delfi.lt, November 27, 2024). This demonstrates that responsible governance involves not only

fiscal discipline, but also adherence to the principles of transparency and efficiency in public financial management. A Delfi article on financial management within couples emphasizes the responsibility of both partners for the shared budget and financial decisions: "*Both partners must feel a sense of financial responsibility. Regardless of how much each contributes to the family's financial wellbeing, both should feel equally valued and equally important in making financial decisions*" (Delfi.lt, March 28, 2023). Across all three portals Delfi, LRT, and 15min the rhetoric of "*responsible governance*" is used as a tool to highlight the efforts of government institutions to ensure financial stability, social justice, and the ability to respond to economic challenges. This rhetoric helps build trust in institutions and reinforces the stability narrative in the public sphere.

An analysis of publications from Delfi, LRT, and 15min between 2020 and 2024 reveals a consistent development of the rhetoric of "*responsible governance*," which functions as one of the primary forms of the stability narrative. This rhetoric is employed in discussions of state budget planning, social policy, the transparency of public finances, and responses to economic challenges such as the pandemic, inflation, or crises. The government's efforts are portrayed as rational, socially sensitive, and oriented toward long-term stability, thereby reinforcing public trust in institutions. In discourse, the concept of responsible governance becomes not only a technical but also a value-based category, affirming the state's credibility and fostering a sense of security among citizens.

Table 12. Structural Elements of the Stability Narrative (LRT, Delfi, 15min, 2020–2024)

Structural Features	Description
Core theme	Economic security is framed through state institutions' preparedness, responsible budgeting, support packages, and reserve management.
Actors	The state (as actor), citizens and businesses (as recipients), experts (as guarantors and commentators).
Plot	The state undertakes planned and considered actions: it develops strategies, allocates support, and manages resources.
Temporal dimension	Emphasis is placed on the state's consistent response and preparedness - stability is presented as a long-term goal.
Value judgments	Responsible governance, budgetary discipline, social justice, and solidarity are presented as positively valued principles.
Metaphors / rhetorical devices	"*State reserve*", "*support package*", "*responsible budget*", "*resource allocation*" - administrative and reassuring vocabulary.
Implied solution	It is communicated that through support, strategies, and institutional responsibility, economic stability and public trust can be ensured.

Source: compiled by the author

Between 2020 and 2024, the stability narrative in Lithuanian media (especially LRT, Delfi, and 15min) is shaped by emphasizing the state's preparedness and responsible response to crises. The core theme of the discourse is linked to economic security based on reserve management, support packages, fiscal discipline, and responsible budget planning. In this narrative, the main actor is the state, which acts in a planned and consistent manner, while the rhetoric is reassuring, highlighting competence and solidarity. This type of discourse reinforces citizens' trust in institutions and positions the state as a guarantor of security in the face of economic challenges.

The narrative of individual responsibility most frequently appears in commercial media. Citizens are encouraged to take responsibility for their own financial security with messages such as "*be prepared*", "*manage your budget*", and "*learn to invest*". This narrative reinforces the positions of neoliberal ideology. As Brown (2015) notes, under neoliberal conditions, citizens are encouraged to take responsibility for their economic security, while public discourse shifts the burden of ensuring security from the state to the individual. This is also evident in media discourse, where advice on saving and budget planning (LRT.lt, 2023-01-05; Delfi.lt, August 9, 2022) serves not only as informational guidance but also as moral norms of behaviour (Rose, 2022). A quote from Delfi (August 9, 2022) states, "*Saving should not happen only during a crisis, but always. You must live within your means, because an economic shock can hit at any time*." This type of phrasing not only informs but also moralizes - frugality is presented as a civic duty. This aligns with Brown's (2015) argument that neoliberalism individualizes systemic problems, making the consequences of crises appear as the result of personal irresponsibility.

The narrative of individual responsibility is grounded in rhetoric that promotes financial literacy, saving, moderation in consumption, the ability to plan personal budgets, and adaptation to changing economic conditions. In the media, this narrative is often conveyed in the form of advice on how to behave during inflation, crises, or energy price spikes. For example, Delfi publishes texts urging people to reassess their expenses: "*Saving should not happen only during a crisis,*

but always. You must live within your means, because an economic shock can strike at any time" (Delfi.lt, August 9, 2022). This quote clearly reveals a moral stance; frugality is presented here as a daily habit rather than a temporary strategy for times of crisis. In this way, financial caution is established as a norm of life, not an exception. On the LRT portal, the structure of practical advice also dominates, though it is more closely tied to family responsibility and a culture of planning. In the quote "*It is important to anticipate your essential expenses and have a financial reserve for unexpected events*" (LRT.lt, January 5, 2023), the emphasis is on preparation in advance. This corresponds to the state's promotion of preventive behaviour and a rhetoric of self-reliance. Here, security is created through individual measures rather than through state mechanisms. Rose (2022) refers to this position as self-governance through competence, the individual is trained to become "*their own manager*," responsible for managing risk. A quote from 15min (April 3, 2023) states, "*Even if the state provides assistance, the decision of how to manage money, i.e., how much to spend, how much to invest is the individual's responsibility*." In this narrative, the main actor is the citizen or the family, and their success or failure is presented as the outcome of responsible or irresponsible actions. This type of narrative reinforces a liberal discourse of responsibility in which economic security partly depends on the individual's capabilities. The quote presents the crisis as a formative situation responsibility is not to be delegated externally. This aligns with Lorey's (2015) argument that "*uncertainty is institutionalized*," and citizens are constantly encouraged to be prepared and to manage themselves, even when support is available.

In the context of the individual responsibility narrative, advice discourse in the media functions as both a pedagogical and normative tool. It conveys not only information but also shapes behavioural models. Journalistic texts become platforms of practical knowledge that encourage citizens to behave in an economically "*correct*" way, to adapt to changing conditions, and to take responsibility for their financial security. LRT also frequently emphasizes the relationship between the state and the citizen as a partnership, where responsibility is shared but the citizen is expected to take the first steps. In 15min publications, advice discourse is often connected to investigative journalism or interview formats, where personal experiences are presented: family stories, the situations of small business owners, and their strategies for adaptation. These texts foster identification with the reader and imply that even when support or systemic assistance is available, decision-making is an individual act that requires preparation. The overall function of these texts is not only to inform about the economic situation but also to establish a normative behavioural model. They convey the idea that every person should have a personal "*economic security plan*" to survive a crisis independently of the actions of state institutions. This form of discourse transforms the citizen from a passive recipient of support into an active builder of economic stability. A quote from Delfi (March 28, 2023) states, "*Both partners must feel a sense of financial responsibility. [...] You should feel equally valued and important in making financial decisions.*" Here, budget planning is understood not only as a technical task but also as a value-driven process that reflects proper social behaviour such as equality, transparency, and responsibility. This is equated with normative citizenship, which becomes "*visible*" through financial practices.

The media contains lexical structures such as "*personal financial discipline*," "*responsible consumption*," and "*lessons of the crisis*," which imply that economic crises are also a kind of moral lesson or test for the individual. This vocabulary indirectly shifts responsibility from systemic causes to individual behaviour. In some cases, the narrative of individual responsibility takes on emotional tones. For example, Delfi presents stories about people who "*failed to manage their debts*" or who "*made changes in time and avoided financial difficulties*." In this way, the narrative becomes moralizing, encouraging identification with the "*responsible citizen*." A quote from Delfi (December 1, 2022) states, "*Tomas decided to give up his car and switched to public transport - this way he saved EUR 150 in one month*." Through personalized stories, the media conveys models that the audience can imitate. This tactic reinforces the performative function of the media (Couldry and Hepp, 2018), where the goal is not only to provide information but also to shape behavioural algorithms.

The narrative of individual responsibility in Lithuanian media is often reinforced through metaphors that not only vividly convey financial behaviour norms but also enable moral judgment. For example, Delfi states, "*The family budget circuit breaker must be switched on before the crisis begins - one must know their priority expenses in advance and have a financial reserve*" (Delfi.lt, April 7, 2023). The metaphor "*family budget circuit breaker*" conveys the preventive function of financial planning: the budget here acts as a protective system meant to withstand economic shocks, much like an electrical fuse protects against overload. In an LRT publication, another metaphor emphasizes personal responsibility: "*Having a financial backbone means knowing your spending limits and sticking to them even under inflationary pressure*" (LRT.lt, May 1, 2023). The metaphor "*financial backbone*" implies that economic stability is an internal support system, whose strength depends on a person's self-control and skills. Meanwhile, another frequently used metaphor in Delfi - "*live within your means*" - is presented as a moral imperative: "*If you want to avoid debt, live within your means and do not treat loans as a solution to excessive desire*" (Delfi.lt, December 9, 2022). This metaphor reduces economic challenges to individual choice, and financial behaviour to moral conduct. In this way, the media not only informs the public about the economic situation but also instils behavioural norms that reinforce a neoliberal discourse of responsibility in which the citizen becomes the central subject of economic security.

Table 13. Structural Elements of the Individual Responsibility Narrative (LRT, Delfi, 15min, 2020–2024)

Structural Features	Description
Core theme	Economic security as a result of personal behaviour and financial literacy.
Actors	Citizen, family, small business (as decision-makers), experts (as advisers).
Plot	The individual must plan, save, consume responsibly, and prepare for unexpected situations.
Temporal dimension	Present actions determine the future — it is important to learn from past mistakes.
Value judgments	Frugality, responsibility, thoughtful planning, preparedness.
Metaphors / rhetorical devices	*"Live within your means"*, *"financial backbone"*, *"family budget circuit breaker"*.
Implied solution	State support is important, but the citizen's decisions determine their level of security.

Source: compiled by the author

The narrative of individual responsibility in Lithuanian media between 2020 and 2024 (especially in Delfi, LRT, and 15min) emphasizes the citizen's duty to ensure their own financial security through self-regulation, financial literacy, and responsible behaviour. The structural elements of this narrative deliver a clear message: the main actor is the individual or the family, and the action involves controlling expenses, saving, and preparing for uncertainty. This discourse logic, grounded in the principles of neoliberal ideology, shifts the responsibility for risk management from the state to the individual, while behavioural norms are presented as moral values (such as "*live within your means*" and "*have a financial backbone*"). The media thus becomes not only a source of information, but also a pedagogical platform that promotes a model of responsible financial conduct.

The enemy identification narrative, whereby the economic threat is personified. It is associated with Russia, China, global corporations, and at times with "*non-transparent business interests*." This narrative mobilizes the public through a "*we versus them*" dichotomy, activating a discourse of national unity. In the article "*Vytautas Bruveris: Lithuania's Eastern Border or the Eastern Front of a Civilizational War*" (LRT, August 14, 2023), the enemy identification narrative is expressed clearly. The quote states, "*Lithuania's eastern border is not just a physical boundary of the state but a line of civilizational confrontation. It is a front where the forces of democracy and authoritarianism clash*" (LRT.lt, August 14, 2023). This quote conveys the metaphor of the "*front*," which symbolizes a distinct value-based and geopolitical division: "*we*" as democracy and "*them*" as authoritarianism. According to Buzan (1991), such constructions allow the discourse of national security to shift into the realm of existential conflict, in which the opposing side becomes a threat to identity. This type of narrative strengthens the figure of the framed enemy, or securitized other, as the primary source of instability.

Between 2020 and 2024, the enemy identification narrative became increasingly prominent in Lithuanian media, especially in the portals Delfi, LRT, and 15min. It aims to highlight threats to national security arising from external actors, particularly Russia. This narrative is constructed through the analysis of symbols and information attacks, with an emphasis on their impact on Lithuanian society. The media frequently discusses the meaning of the Saint George ribbon and its use as a propaganda tool. For example, the LRT publication titled "*The Saint George Ribbon as a Symbol of Kremlin Propaganda*" (LRT.lt, May 9, 2022) examines how this symbol is used to spread pro-Russian sentiment and reinforce Kremlin narratives. The article emphasizes that the ribbon has become not only a symbol of victory in the Second World War, but also an instrument employed in political propaganda. This reflects a media tendency to identify certain symbols as threats to national security, and to encourage public alertness to potential information attacks. On the LRT portal, information attacks are frequently emphasized. One article state, "*Russian propaganda seeks to influence Russian-speaking residents of Lithuania by spreading disinformation and fuelling distrust in the state*" (LRT.lt, November 15, 2022). This highlights the systematic effort by a hostile state to act not only from the outside but also from within the country by dividing society and weakening trust in institutions. In a 15min article on Russia's war economy, it is stated, "*Due to the increasing structural militarization of Russia's economy, any efforts to end the war in Ukraine become much more difficult*" (15min.lt, May 3, 2024), and "*Russia will not stop. Its economy is becoming increasingly dependent on war*" (15min.lt, May 3, 2024). These quotes reveal that Russia's economy is increasingly oriented toward the military sector, indicating a long-term and systematic readiness to continue aggression. These kinds of formulations not only inform the public but also reinforce the image of a long-term threat. War is presented as a systemic phenomenon, and Russia becomes the embodiment of a hostile and destabilizing force. Additionally, in the LRT article "*Russia's Information Attacks: How to Recognize and Protect Yourself*" (LRT.lt, March 22, 2023), it is emphasized that "*disinformation campaigns often target emotions in order to provoke fear, anger, or distrust.*" This shows that information attacks are carefully planned

and directed at the emotional climate of the public in order to destabilize the internal cohesion of the country. A 15min analysis titled "*The Militarization of Russia's Economy: A Threat to Regional Stability*" (15min.lt, April 18, 2024) states, "*The expansion of the war industry in Russia not only strengthens its military capabilities, but also becomes a key part of the economy, supported by state subsidies and propaganda rhetoric*." This analysis emphasizes that militarization is not only a military strategy but also an economic one that enhances Russia's ability to pursue aggressive policies. The quotations from LRT and 15min show that Russia's information attacks and the militarization of its economy are interrelated phenomena that pose a threat not only to Ukraine, but also to regional stability and Lithuanian national security. Information attacks aim to divide society from within, while economic militarization signals a long-term commitment to continued aggression.

The publications mentioned above demonstrate how the media constructs the enemy identification narrative through different discursive channels. These range from symbolic language such as ribbons, borders, and fronts to the analysis of economic and informational actions. In this narrative, the enemy is framed as an existential threat that demands mobilization, resilience, and value-based unity. This aligns with Buzan's (1991) concept of security, where a threat is not merely an objective phenomenon but is also discursively constructed, often through moral and cultural boundaries. Scholars such as Brown (2015) and Rose (2022) analyse how, under neoliberal conditions, citizens are encouraged to take responsibility for their own economic security, while public discourse shifts the burden of security from the state to the individual. This tendency is also evident in the enemy identification narrative, where the emphasis on threat encourages citizens to remain vigilant and to take responsibility for their own informational security.

Metaphors play an important role in shaping public perception of threats and encouraging vigilance against information attacks. The metaphor "*information war*" is used to describe systematic disinformation campaigns directed at Lithuanian society. The concept of information war is becoming increasingly integrated into the enemy identification narrative in Lithuanian media. It is not merely an additional semantic layer, but a significant component of the security discourse that structures how citizens perceive threats. The informational threat goes beyond traditional boundaries of military conflict and operates not through physical violence, but through symbolic power — information, meanings, and emotional resonance. For example, an LRT article titled "*Russia's Information Attacks: How to Recognize and Protect Yourself*" (LRT.lt, March 22, 2023) states, "*Disinformation campaigns often target emotions in order to provoke fear, anger, or distrust.*" This quote highlights that information attacks are carefully planned and aimed at the emotional background of society in order to destabilize the country's internal cohesion. The concept of information war is becoming more deeply embedded in the enemy identification narrative. The LRT portal states, "*Russian propaganda seeks to influence Russian-speaking residents of Lithuania by spreading disinformation and encouraging distrust in the state*" (LRT.lt, November 15, 2022). This quote underscores a systematic tactic of informational influence aimed at dividing society. Here, the "*enemy*" is no longer just a physical aggressor but becomes a communicative and discursive construct. This narrative implies that the struggle for security takes place not only on the battlefield, but also within the informational space. In an analytical commentary published by 15min, it is written, "*The term 'information war' is being used more frequently when referring to the Kremlin's strategic aim to influence Western societies not through military means but through symbolic language, narratives, and emotions*" (15min.lt, February 11, 2023). This statement shows that the logic of information war is based on a narrative structure — it is a discursive intervention through which a hostile actor seeks to shape perceptions, attitudes, and collective self-awareness. In this way, an information attack becomes a structured communication campaign aimed at fragmenting society, increasing distrust in institutions, and weakening value-based cohesion. According to security studies (Buzan et al., 1998; Hansen, 2013), such narratives can be interpreted as securitization, meaning the framing of certain phenomena as threats that legitimize exceptional state measures. The metaphor of information war enables state institutions to justify communicative responses as necessary: strengthening society's resilience to disinformation, controlling the informational environment, and developing media literacy strategies. This also raises the question of the role of the media — it becomes not only a means of informing the public but also a battlefield where frames of collective identity and threat perception are formed. The concept of information war in Lithuanian media between 2020 and 2024 is transforming into an autonomous narrative model through which the image of the enemy is structured via symbolic rather than physical confrontation. This form of discourse is especially prominent in the portals LRT and 15min, which not only report facts but also actively participate in shaping the narrative.

The enemy identification narrative in Lithuanian media between 2020 and 2024 develops not only through external threats but also through internal ones. One of the most significant structural elements of this narrative is the metaphor of the "*internal enemy*," which functions as a tool of social stigmatization. It enables political and institutional actors to define the boundaries of loyalty within the state. This metaphor is most often associated with individuals or groups who are critical of the state, who question national security policies, or who are ideologically linked in some way to hostile states. For example, in a Delfi article on informational threats, it is stated, "*Disinformation campaigns often target emotions in order to provoke fear, anger, or distrust*" (Delfi, December 4, 2022). This quote suggests that information

attacks can be directed at groups within the country, aiming to destabilize them and frame them as the internal enemy. In an article on the LRT portal titled "*Russian propaganda seeks to influence Russian-speaking residents of Lithuania,*" it is stated, "*By spreading disinformation and encouraging distrust in the state, propaganda targets the very core of society*" (LRT.lt, November 15, 2022). It is implied that the internal enemy can be associated with civil society itself, or with parts of it that become either targets or even channels of information warfare. In Delfi commentaries, political scientist Kasčiūnas notes that "*Some public figures, while manipulating rhetoric about supposed independence, in fact repeat hostile propaganda clichés*" (Delfi.lt, February 14, 2023). Statements like these show that the internal enemy is discursively constructed, not only as an active agent of threat, but also as a rhetorical symbol of opposition. A 15min publication examining the consequences of Russia's information war states, "*Information attacks target not only state institutions, but also public opinion leaders, aiming to undermine trust in democracy*" (15min.lt, April 21, 2023). This quote shows that the internal enemy can also be identified among opinion leaders who, either indirectly or unintentionally, become vectors for the spread of disinformation. From a theoretical perspective, the concept of the internal enemy is linked to Foucault's (1977) analysis of power, where power operates not only through prohibitions but also through constant surveillance, classification, and normalization. This metaphor creates new social boundaries between "*loyal citizens*" and those whose loyalty is seen as questionable. As noted by security theorists (Buzan et al., 1998), threat is socially constructed through linguistic acts, and the internal enemy becomes a rational basis for implementing security measures even in democratic societies. The narrative of the internal enemy in Lithuanian media between 2020 and 2024 functions as a mechanism for articulating threat. It creates new boundaries of loyalty, encourages self-monitoring, and reinforces the legitimacy of state control. This is a narrative that, by drawing on the logic of information warfare, defines not only the country's relationship with external forces, but also reconstructs the roles of citizens within the architecture of national security.

The metaphor-term "*fifth column*" is used not only in historical or military analyses, but also in contemporary media discourse to describe an internal threat arising from ideological or informational ties to hostile states. In a 15min publication on informational threats (15min.lt, May 3, 2024), it is stated, "*The expansion of the war industry in Russia not only strengthens its military capabilities, but also becomes an important part of the economy, supported by state subsidies and propaganda rhetoric."* This quote suggests that the war economy is not limited to physical fronts, it also operates through informational dissemination, shaping opinions and exerting influence within other countries. In this context, the "*fifth column*" becomes not only a symbolic, but also a practical tool. It may refer to individuals, organizations, or even social media channels that contribute to the destabilization of the informational environment. The Speaker of the Lithuanian Parliament, Skvernelis, publicly declared a potential internal threat: "*There is a certain fifth column forming in the Seimas. We see it in the way votes are cast*" (Delfi, November 22, 2023). This quote demonstrates how the political elite employs the narrative of the internal enemy to delegitimize opposition forces and reinforce a polarized political climate. Similarly, in opinion journalism, the term is used to describe pro-Kremlin movements in Lithuania. A Delfi article titled "*Worshippers of Greater Russia in Lithuania*" discusses: "*They worship Putin, Russia, and glorify the imperial project. This is an ideological fifth column*" (Delfi, May 16, 2023). The 15min portal also emphasizes that the war economy in Russia is inseparable from the dimension of information warfare: "*Russia will not stop. Its economy is increasingly dependent on war*" (15min, May 3, 2024). Propaganda rhetoric, supported by state subsidies, also functions as a mechanism of informational influence over other states, fostering what is called the "*fifth column*." In the article "*The Culture of Freedom of Conscience*," Ignas Dilys observes, "*The widely echoed warning about the 'fifth column' encourages vigilant citizens to look out for individuals with hostile intentions*" (Delfi, November 23, 2023). This wording illustrates how threat becomes personalized and every day, encouraging self-surveillance and an atmosphere of collective vigilance. The term "*fifth column*" has become a multi-layered symbol in Lithuania's public sphere, used to identify political, cultural, and ideological opponents. This narrative functions as a discursive technology that strengthens national identity through oppositional contrast and legitimizes the actions of security institutions within domestic space. By using this term, the media acts as an intermediary of political discourse, reinforcing the boundary between "*loyal citizens*" and "*hostile agents*." This kind of narrative mobilizes society, shapes the perception of threat, and reinforces a clear dichotomy between "*us*" and "*them*" even within the borders of the state.

Table 14. Structural Elements of the Enemy Identification Narrative (LRT, Delfi, 15min, 2020–2024)

Structural Features	Description
Core theme	National security threats arising from external sources (Russia) and internal (pro-Russian) actors.
Actors	Enemy (Russia, pro-Russian actors), victim (Lithuania, its citizens), defenders (state institutions, media).
Plot	The enemy uses information attacks and symbols to divide society. The state and media identify and neutralize threats.
Temporal dimension	A constant threat that requires vigilance and response.
Value judgment	Patriotism, loyalty to the state, resilience to propaganda.
Metaphors and rhetorical devices	*"Information war", "internal enemy", "fifth column".*
Implied solution	Strengthen societal resilience, promote critical thinking, encourage loyalty to the state.

Source: compiled by the author

Between 2020 and 2024, the enemy identification narrative in Lithuanian media (LRT, Delfi, 15min) took on a highly distinct form, structured through clear elements: a thematic core (external and internal threat), actors (the enemy as Russia and the "*fifth column*"; defenders as the state and citizens), a plot (the enemy acts through information warfare), metaphors ("*front*", "*information war*", "*internal enemy*"), and an implied solution (vigilance, resilience, unity). In this discourse, threat is not limited to physical danger, it is constructed through symbolic, informational, and emotional dimensions. Metaphors mobilize society, reinforce the "*us versus them*" dichotomy, and justify security policy measures. Using this narrative, the media becomes not only a disseminator of information, but also a strategic actor in security communication, shaping citizen identity and the boundaries of responsibility.

The sustainability and transformation narrative most often appears in environmental or innovation-related contexts. In the content of LRT, Delfi, and 15min, this discourse is constructed through an emphasis on strengthening ecological, economic, and technological resilience. What distinguishes this narrative is its framing of threat as opportunity. It not only informs about challenges but also mobilizes society toward change. For example, the LRT portal writes, "*By 2050, Lithuania aims to use 100 percent renewable energy, and the country's priority is to reduce its dependence on Russian energy sources*" (LRT.lt, June 1, 2023). The quote emphasizes a systemic and value-driven transition from traditional energy models to renewable solutions. A Delfi article highlights, "*The transformation toward a green economy is not only a climate goal. It is also an economic opportunity for Lithuania to become an innovative, high value-added country*" (Delfi.lt, March 16, 2023). Meanwhile, a 15min publication states, "*Technological innovation and sustainable energy will help not only to reduce CO2, but also to create jobs in the regions*" (15min.lt, May 8, 2023). Statements like this shape a narrative in which challenges become not just threats, but also opportunities for breakthrough, encouraging the modernization of the state. In this discourse, sustainability is associated with progress, technology, social cohesion, and energy independence.

A Delfi article states, "*Sustainability today is no longer a luxury but a necessity, and resilience includes the ability not only to withstand shocks but also to recover and adapt*" (Delfi.lt, August 30, 2023). This shows that the concept of sustainability in contemporary discourse has expanded and now encompasses a broader transformation paradigm. The sustainability and transformation narrative in Lithuanian media between 2020 and 2024 is grounded not only in the promise of ensuring environmental balance, but also in a value-driven and strategic shift within social structures. A Delfi article emphasizes, "*Sustainability today is no longer a luxury but a necessity, and resilience includes the ability not only to withstand shocks but also to recover and adapt*" (Delfi.lt, August 30, 2023). This phrasing implies that sustainability is no longer just an environmental goal. It is an integral strategy for social resilience. The LRT portal writes, "*By 2050, Lithuania aims to use 100 percent renewable energy, and the country's priority is to reduce its dependence on Russian energy sources*" (LRT.lt, June 1, 2023). This quote reflects not only technological transformation, but also the geopolitical aspect of sustainability strengthening independence from external threats. A 15min article on the circular economy states, "*Investments in circular economy solutions represent not only ecological progress but also the strengthening of economic resilience*" (15min.lt, April 19, 2023). Sustainability becomes inseparable from economic logic. It is viewed as a long-term investment in the capacity to adapt to crises. As noted by Beck (1992), the society of late modernity becomes a risk society, which means that the ability to adapt and maintain stability becomes a central goal of political and social order. According to Stirling (2015), the narrative of transformative sustainability is not merely about adaptation. It also involves structural change that alters the distribution of economic and political power. This is especially relevant in discourses on energy, transport, and climate change, where the shift in rhetoric emphasizes active transformation rather

than passive adjustment. Therefore, the discourse in the media is strengthening in a direction where sustainability is presented as a synthesis of national responsibility, technological innovation, and social justice.

A 15min analysis states, "*A ship carrying liquefied natural gas is not only an energy commodity, but also a symbol, a sign of independence and strength for the Baltic States*" (15min.lt, May 15, 2022). This quote assigns symbolic meaning to energy transformation. It is no longer just an infrastructural choice, but one of identity. The LNG ship becomes not only a practical tool for independence from Russian energy, but also a cultural and geopolitical sign. An LRT article also emphasizes symbolic meaning: "*The LNG terminal has become an icon of Lithuania's energy sovereignty, demonstrating that the country can choose its own path*" (LRT.lt, February 1, 2023). Formulations like these allow energy infrastructure to be interpreted as a national symbol, one that reinforces meanings of identity, autonomy, and resilience. According to Buzan (1991), the security of a state becomes inseparable from factors of identity when infrastructural decisions take on existential meaning. This is confirmed by Wrobel (2015), who stresses that energy independence in Central and Eastern Europe is tied to historical trauma and the fear of political domination. For this reason, LNG terminals, wind turbines, and solar parks are described in the media not only as technological solutions, but also as symbols of resistance, independence, and value-driven choice. A Delfi article (April 4, 2023) notes, "*Solar power stations in villages have become a source of community pride. They represent progress and responsibility*." Here, sustainability infrastructure acquires a local identity dimension. It contributes not only to economic security, but also to communal value. In this way, transformation moves beyond an engineering phenomenon and enters the symbolic and cultural domain, establishing energy as part of a discourse where politics, economics, and national self-understanding intersect.

The role of digitalization in strengthening resilience is becoming increasingly important both in media discourse and in academic research. As noted by LRT, "*the resilience of the future will depend on our ability to manage data, optimize systems, and create digital connections*" (LRT.lt, February 12, 2024). This quote highlights that digital technologies and data management are essential components for ensuring the resilience of organizations and societies. Academic literature also emphasizes the importance of digitalization in the context of resilience. Verhoef et al. (2021) argue that digital transformation increases the flexibility of organizations and their ability to adapt to changing conditions, which is a necessary part of resilience. They emphasize that digital transformation allows organizations to respond quickly to external disruptions and to maintain operational continuity. Furthermore, Grigorescu et al. (2023), in their study on regional digital resilience, highlight the role of higher education institutions in fostering innovation and knowledge transfer, which contributes to regions' ability to adapt to digital challenges. They propose the quadruple helix model in which universities, businesses, government institutions, and society collaborate to strengthen digital resilience. Gomber et al. (2018) also emphasize that advanced analytics and digital learning technologies provide insights that help to anticipate risks, develop mitigation strategies, and maintain a high level of resilience. They note that technologies such as blockchain and artificial intelligence improve risk management and resilience, particularly in the financial services sector. Both media and academic literature stress that digitalization and data management are key factors in enhancing the resilience of organizations and societies. By integrating advanced technologies and promoting collaboration across various sectors, it is possible to build a sustainable and resilient digital infrastructure capable of adapting to changing challenges.

This narrative is often based on metaphorical structures that not only convey informational content but also shape value-based attitudes and mobilize society to take action. Metaphors help the audience understand complex processes related to climate change, energy security, and the green economy, and encourage engagement with the discourse of sustainability (Lakoff, 2014). First, the metaphor "*Green Deal*" (see Table 14) is frequently used to describe the European Union's sustainability strategy. The LRT portal states, "*The European Green Deal is our new growth strategy that will help reduce greenhouse gas emissions and stimulate economic growth*" (LRT.lt, October 10, 2021). This phrase expresses a strategic plan focused on environmental protection and systemic change. The metaphor constructs the pursuit of sustainability as a shared and inevitable process aimed at long-term wellbeing. Second, "*sustainable future*" is a metaphor that provides a moral direction for contemporary decisions by emphasizing responsibility toward future generations. As stated on the Delfi portal, "*Investments in renewable energy sources are essential to ensure a sustainable future for our children*" (Delfi.lt, April 3, 2023). This metaphor functions as a moral argument that appeals to collective responsibility and long-term vision. Third, the metaphor "*energy independence*" is often associated with geopolitical security and identity-related meanings. The 15min portal notes, "*The LNG terminal has become a symbol of Lithuania's energy independence, allowing the country to ensure its energy security*" (15min.lt, May 15, 2022). This rhetorical device not only communicates infrastructural developments but also frames them as strategic actions with symbolic meaning. Fourth, the phrase "*transition to a green economy*" emphasizes the need to transform the economic model. The LRT portal states, "*The transition to a green economy is necessary to reduce the impact of climate change and promote sustainable growth*" (LRT.lt, September 12, 2022). Here, the metaphor is functionalized as a future-oriented process that implies moving away from fossil fuels toward renewable solutions. These metaphors serve not only a representational, but also a performative function. They

do not merely transmit information, but also mobilize, encourage adaptation, and invite engagement with sustainability actions (Couldry and Hepp, 2018; Lakoff, 2014). This shows that the media is becoming an active agent in shaping the discourse of sustainability, reinforcing the map of transformation and ecological awareness in the public sphere.

Table 15. Structural Elements of the Sustainability and Transformation Narrative (LRT, Delfi, 15min, 2020 to 2024)

Structural Features	Description
Core theme	Ecological, economic, and social sustainability as a necessary condition for transformation.
Actors	The state, European Union institutions, businesses, the consumer, nongovernmental organizations.
Plot	Green reforms are implemented, there is a transition to renewable energy, and sustainable practices are introduced.
Temporal dimension	Transformation as a long-term process oriented toward the future.
Value judgment	Sustainability, responsibility, innovation, cooperation, focus on future generations.
Metaphors and rhetorical devices	*"Green deal"*, *"sustainable future"*, *"energy independence"*, *"transition to a green economy"*.
Implied solution	The state and citizens must invest in sustainability and adapt to change.

Source: compiled by the author

The sustainability and transformation narrative in Lithuanian media between 2020 and 2024 is shaped as a strategic discourse that encompasses ecological, economic, and social change. This narrative is characterized by its orientation toward building a long-term vision of the future, where the main actors are the state, European Union institutions, businesses, consumers, and non-governmental organizations who act as co-creators. Through rhetorical devices such as "*green deal*" and "*energy independence*" (see Table 15), a positive and mobilizing model of action is expressed. In the media, it is often presented as an opportunity for change rather than simply as a response to crisis. The value foundation of this narrative includes responsibility, innovation, cooperation, and care for future generations, which enhances its normative power. The sustainability narrative functions not only on the informational level, but also on ideological and cultural levels, encouraging societal transformation through value based and strategic thinking.

In Lithuanian media (LRT, Delfi, 15min) during the period from 2020 to 2024, the articulated discourse of economic security is structured into five main narratives: threat, stability, individual responsibility, enemy identification, and sustainability and transformation. Each of these has a specific semantic, pragmatic, and ideological structure that reflects not only an informational function, but also the shaping of public opinion, emotional climate, and political mobilization. The dominant threat narrative conveys economic insecurity through an emphasis on uncertainty, external risks, and internal vulnerability. These are reinforced by metaphorical structures such as "*economic storm*," "*inflation front*," and "*crisis blow*." The narrative intensifies public anxiety and raises expectations for state intervention. The stability narrative, by contrast, highlights the state's capacity to respond to crises through support packages, the state reserve, or responsible governance. Within this discourse, the media plays a role in reinforcing trust and legitimizing state authority. The narrative of individual responsibility is connected to the expansion of neoliberal ideology. In this framework, the citizen is portrayed as an autonomous subject of economic security who must live within their means, have a financial backbone, or activate the budget circuit breaker. In this way, responsibility for security is shifted from the state to the individual. The enemy identification narrative creates a clear dichotomy of 'us' versus 'them', where the enemy — Russia or internal pro-Russian actors — is framed through metaphors of information war, the internal enemy, or the fifth column. This narrative strengthens national solidarity and legitimizes state security policies. The sustainability and transformation narrative stands out as a positive and normative model of discourse. It emphasizes ecological, economic, and technological resilience as well as the opportunities of a transitional period, inviting society not only to adapt to change, but also to shape it actively. Metaphors such as green deal, sustainable future, and energy independence reinforce the mobilizing power of the discourse. The findings of this research show that the media does not merely transmit information, it also actively shapes the ideological logic of the economic security discourse from signalling threat to encouraging transformation.

Emotional and Semantic Analysis of the Narratives in the Discourse of Economic Security. The discourse of economic security in Lithuanian media is shaped not only through actual economic indicators, but also through emotionally charged linguistic choices that mobilize the audience, reinforce the perception of threat, or conversely, create

a sense of stability. This analysis draws on the insights of Lakoff (2014), Buzan et al. (1998), which emphasize that metaphors and discursive frames are not merely stylistic elements. They structure how the audience perceives reality.

The discourse of economic security in Lithuanian media between 2020 and 2024 is marked by a high density of emotional and semantic markers, especially in topics such as energy dependency, inflation management, military threat, and geopolitical stability. Narrative analysis applied to texts from Delfi, LRT, and 15min reveals a clear correlation between geopolitical events such as the start of the war in Ukraine and the intensification of emotional rhetoric. Emotional analysis shows that dominant emotions include fear, indignation, and patriotism. Delfi and LRT more often employ constructive emotional framing such as strength and unity, while 15min more frequently uses rhetoric of crisis or uncertainty. The semantic map generated using the method of latent semantic analysis allows for the identification of key concepts such as security, aggression, energy independence, NATO, and threat. Semantic associations between economy and defence intensified after 2022, indicating a militarization of the discourse. These findings confirm data from studies on information warfare in the Baltic region, which emphasize that emotional articulation is a strategic media tool used to strengthen trust in national institutions and to promote social cohesion (Cook, 2021).

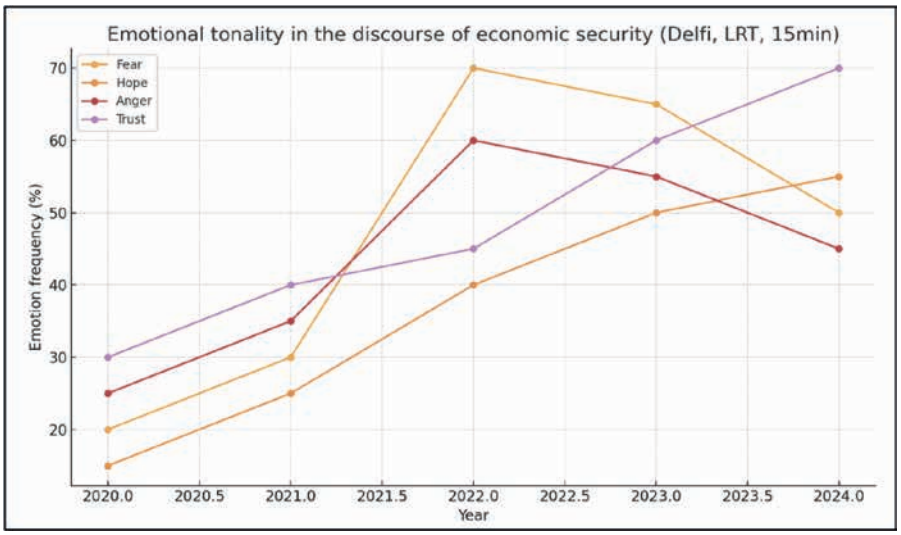


Figure 6. Changes in the Frequency of Emotions in the Discourse of Economic Security in Lithuanian Media (Delfi, LRT, 15min) during the period 2020 to 2024

Source: created using the Python programming language and its Matplotlib visualization library

The chart (see Figure 6) reveals changes in the frequency of emotions in the discourse of economic security in Lithuanian media (Delfi, LRT, 15min) during the period from 2020 to 2024:

- The intensity of fear and anxiety spiked sharply in 2022, associated with the start of the war in Ukraine, but later decreased.
- Trust and hope increased steadily, especially after 2022, indicating a stabilization and more constructive tone in the discourse.
- Anger rose in 2022 but began to decline as the discourse took on a less confrontational nature.

Public communication in contemporary society is inseparable from emotion. The media not only informs but also shapes the emotional climate of society, influencing collective perceptions of threats, political decisions, or social change. According to media studies theorist Gross (2002), emotions can be deliberately regulated or triggered by specific communicative means, especially in the media, where selectively chosen events and their interpretations dominate. Wahl Jorgensen (2020) states, "*The media functions as an emotional infrastructure in which fear is not only reflected but also produced*" (p. 14). Media content, using strong linguistic emphasis, not only conveys information, but also shapes the collective emotional climate.

The media frequently uses constructions that express fear, anxiety, and uncertainty. For example, phrases such as "*inflation front*" (15min, September 27, 2023), "*crisis blow*" (Delfi, September 27, 2022), and "*threatening storm clouds*" (15min, February 17, 2022) portray economic processes as threatening, inevitable, and personally impactful. This creates an emotional atmosphere in which rational evaluation gives way to a desire for security. These texts are often structured in a way that builds emotional tension to a climax, after which a possible solution is presented such as state intervention, a support package, or citizen responsibility. This structure is typical of crisis communication and functions as a symbol of emotional release and hope. One of the clearest examples is a Delfi.lt project on mental health, which states, "*The*

invisible pandemic: a life shattering disorder is hitting harder and harder, the numbers have already reached unprecedented heights" (Delfi.lt, April 28, 2022). The quotes use hyperboles such as "*hitting harder and harder*" and "*unprecedented heights*" that generate a strong emotional reaction. This stylistic approach aligns with the concept of emotional framing described by O'Neill and Nicholson Cole (2009), where information is framed to evoke fear, insecurity, or even guilt. A similar effect is created by 15min.lt messages about the threat of war. One article state, "*Anxiety index survey: 77 percent of Lithuanians feel a direct threat of war even in Lithuania*" (15min.lt, March 14, 2023). Here, the use of a statistical figure (77 percent) acts as numerical dramatization which, according to Wahl Jorgensen (2020), becomes an effective tool for amplifying fear when subjective emotions are supported by supposed objectivity. Another quote from LRT.lt shows how the media conveys institutional assessments: "*Security experts warn that Lithuania faces cyberattacks and must prepare for the worst-case scenario*" (LRT.lt, October 21, 2022). This type of rhetoric such as "*could face*" and "*worst case scenario*" matches the models of risk communication described by Beck (1992), where a persistent sense of insecurity is cultivated in society, even when the actual threat is difficult to define or remains hypothetical. The media constructs the discourse of fear not only with words but also visually. These texts are often accompanied by alarming images such as military equipment, grieving people, or fans wearing masks. Coleman (2012) argues that such visual language strengthens the narrative and affects the reader's emotional experience rather than rational thinking. The expression of fear in the media is not accidental. It is a deliberately applied strategy of emotional engagement. The media, especially Delfi and 15min, use alarming headlines, exaggerated vocabulary, and emotional framing to create tension as a means of retaining audience attention (Wahl Jorgensen, 2020). This mode of expression reflects a deeper paradox of the information society: the more information we have, the more intense the emotional responses to it become.

Anxiety is often linked not to a specific threat but to uncertainty, unpredictability, and the unknown. The portal 15min frequently uses rhetorical questions such as "*Will small businesses survive?"* and "*What awaits the healthcare system?*" thereby implying unresolved issues. According to Beck's theory of the risk society (1992), such phrases reflect structural anxiety that arises not from isolated events, but from ongoing systemic instability. Anxiety emerges as the dominant emotion in 2020 when both health and economic threats were being articulated due to the danger of COVID-19. In public space, anxiety is a unique emotional state tied not so much to a direct threat but to constant uncertainty, waiting, and doubt. Beck's theory emphasizes that the structure of modern society is based on the continuous communication of risks which creates not fear, but rather an atmosphere of anxiety since threats are often invisible, dispersed, and never fully resolved. On the 15min portal, this emotion is frequently conveyed through interrogative constructions that do not offer answers but instead generate further tension. For example, in a 2022 article about inflation, the question is posed, "*Will Lithuania cope with record prices?*" (15min.lt, October 17, 2022). Such questions, although formally neutral, imply doubt and anxiety about the future. This is a typical strategy of what is known as problem framing, where journalistic discourse constructs an atmosphere of uncertainty (Entman, 1993). During the pandemic, anxiety became one of the dominant emotions. The LRT portal wrote, "*Coronavirus changes everything. Will we return to normal life?*" (LRT.lt, January 10, 2021). This example again demonstrates the recurring rhetorical structure, a question without a clear answer. Journalists here are not only conveying a fact about the impact of the virus, but also expressing emotional uncertainty, which, as noted by Wahl Jorgensen (2020), is an emotional companion of social change. Delfi also uses similar rhetoric. In an article about mental health, it states, "*Life after the pandemic: more questions than answers*" (Delfi.lt, March 22, 2023). This formula, questions without answers, reflects what sociologist Ahmed (2013) calls affective insecurity, where texts continually create a sense of waiting and instability, but never fill it with specific content. Another important detail is that the language of anxiety often uses words with vague but strongly negative connotations such as crisis, instability, uncertainty, pressure, tension. For instance, "*Pressure in the labour market is being felt across all sectors*" (15min.lt, September 4, 2023). Here the word 'pressure' conveys an intensifying but unspecified threat. The visual part of journalism also contributes to this effect. Articles about economic uncertainty are often accompanied by photos of empty offices, closed businesses, or worried individuals. According to Coleman (2012), such illustrations reinforce the tone of the narrative and heighten the affective impact of the text on the reader. The expression of anxiety in Lithuanian media between 2020 and 2024 often appears not as a clearly defined threat, but as a rhetorical construction through questions, vague forecasts, and affective metaphors. In this way, the media shapes a long-term emotional background that influences both individual moods and collective public sentiment.

Unlike fear or anxiety, anger in public discourse often has a specific target or culprit. Sociologist of emotion Ahmed (2013) notes that "*anger is a directed emotion that shapes moral boundaries by identifying who has violated a norm and who must be condemned*" (p. 171). In Lithuanian media, expressions of anger are most commonly used in contexts of political or social dissatisfaction. This emotion is conveyed both through criticism of institutions and through quotations of reader voices. On the 15min portal in 2022, an investigation into possible misuse of public funds appeared under the headline, "'*Do they think we are idiots?' — readers outraged over parliamentary spending*" (15min.lt, June 3, 2022). This quote highlights an authentic expression of anger, and its expressiveness, with words like "*outraged*" and "*idiots*,"

allows the media to present emotional disappointment from readers as a socially significant signal. This strategy aligns with what is known as the politics of outrage (Wahl Jorgensen, 2019), in which media use expressions of anger as a tool to mobilize and engage audiences. The targets of anger are often government institutions or their actions. On the LRT portal, a headline reads, "*Teachers warn we are tired of being exploited*" (LRT.lt, September 1, 2023). Here, anger arises from a sense of social injustice and exploitation. As noted by Flam (2005), these themes often create the conditions for collective emotions in public space. The use of the verb "tired" indicates accumulated anger that has grown over time and finally erupts in public statements. An example from Delfi reads, "*After the scandal over doctors' salaries, the prime minister's words provoked even more anger: 'He is mocking us*" (Delfi.lt, January 16, 2023). In this case, the journalistic text conveys not only the presence of anger but also its escalation, as seen in the phrase "*even more anger*," emphasizing emotional intensification. This kind of emotional escalation, as noted by Papacharissi (2015), is typical of digital media, where the expression of anger is often used as a way to energize a message. Anger can also be expressed through irony, sarcasm, and an informal tone. In an article about strikes, the text states, "*For six months they promised a solution, now they offer patience - teachers respond: we have no patience left*" (15min.lt, February 28, 2024). The quote implies an emotional limit that, once crossed, transforms passive frustration into active resistance. This matches Jasper's (2011) concept of moral anger, where people become angry not only due to personal grievances but because their core values are violated. Between 2020 and 2024, anger in the media was not a random phenomenon - it was a strategically constructed emotion often directed at government institutions, injustice, and social inequality. The expression of anger not only gives voice to emotional reactions, but also enables collective action, public debate, and political engagement. The expression of anger varies depending on the editorial stance of the media outlet. Delfi and 15min often draw on opinions from social media or reader comments, quoting emotional statements such as "*People no longer trust the government*" or "*This is a mockery of taxpayers*." Meanwhile, LRT more often channels anger through editorial commentary or analytical articles, as in "*Inaction is the greatest danger in the face of crisis*" (LRT, February 18, 2022). This approach aligns with Habermas's theory of the public sphere (1991), which emphasizes the relationship between rational discourse and emotional indignation as a foundation for political activity.

Although fear, anger, or anxiety more frequently dominate the news stream, positive emotions, especially hope, also hold an important place in media discourse, particularly during times of crisis. According to Nabi (2002), hope encourages people not to react passively to threats, but to actively seek solutions, plan actions, and believe in recovery. On the LRT portal, positive expression is especially visible when discussing sustainable development and economic change. For example: "*The transition to a green economy is necessary to reduce the impact of climate change and to promote sustainable growth*" (LRT.lt, September 12, 2022). This quote reflects an orientation toward the future, optimism, and a long-term goal, which are characteristic semantic markers of hope (Averill et al., 2012). In this way, the media not only acknowledges the problem, such as the climate crisis, but also presents it as solvable, depending on human will and decision making. The discourse of hope is also observed in health-related topics. In a Delfi article about innovation, it is written: "*Scientists in Lithuania are developing a new cancer treatment method that could save thousands of lives*" (Delfi.lt, April 3, 2023). Such texts often convey hope as a rational expectation based on scientific progress. According to Feldman (1988), this is referred to as intellectual hope, where emotional belief is linked to technology, scientific advancement, or collective competence. On 15min, expressions of hope appear most clearly in contexts related to civic engagement and social initiative. For example: "*Despite the difficulties, Lithuanians are volunteering more actively and creating support networks. The pandemic has united them*" (15min.lt, November 10, 2021). This kind of positive message conveys not individual but collective hope — a narrative of community resilience which, as noted by Papacharissi (2015), shapes emotional public spaces based on care rather than solely anger or fear. Another notable case is media communication in the context of war. An LRT article on the reconstruction of Ukraine states: "*Despite the war, Ukraine is already planning a reconstruction strategy. There is belief in the future of democracy*" (LRT.lt, June 30, 2024). Here, hope is articulated as a response to upheaval — not a denial of the threat but a belief in renewal, similar to Frankl's (2004) principle of meaningful suffering. Visually, hope is often conveyed through bright, colourful, and optimistic images such as smiling people, scientists or activists working in green natural settings. This visual language complements the verbal discourse of hope and shapes an overall emotional tone that contributes to informational resilience.

Although the media is often accused of emotional negativity, LRT stands out through its expression of a more positive emotion — hope. Statements such as "*Lithuania withstood the first blow of the pandemic more strongly than its neighbours*" (LRT.lt, May 30, 2021) indicate a deliberate choice to spread optimism. According to Nabi (2002), hope in the media functions as a reinforcer of trust and resilience, especially during times of crisis. This emotion is essential not only for psychological well-being, but also for the political state of society. The expression of hope in Lithuanian media is not accidental. It is used when there is a need not only to inform but also to mobilize society to act and to believe in the future. This is particularly important in crisis contexts, where emotional exhaustion can be alleviated not through calm but through inspiration.

Trust is one of the main pillars of public communication, especially during times of crisis, war, or uncertainty. According to Giddens (1996), trust steps in where there is no possibility of individual control over the situation. It is the stability of action based on dependence on the system (p. 33). In the media, trust is often articulated through confidence in institutions, experts, professionals, or technological solutions. One of the clearest examples is a text published by LRT during the pandemic: "*Eighty-three percent of residents trust Lithuanian doctors. This shows that the health system managed the first wave*" (LRT.lt, May 10, 2021). This message strengthens the image of institutional trust, grounded in empirical data. According to Luhmann (2018), trust is based on the reliability of a functioning complex system. In this context, the media acts as a reflexive mirror of the system that legitimizes or delegitimizes its actors. A 2023 article on the 15min portal stated: "*Even in the context of war, Lithuanians maintain high trust in the army and NATO. This has been one of the most stable indicators since 2014*" (15min.lt, March 22, 2023). This formulation presents trust as a consistent and long-term value that symbolizes the stability of the relationship between citizens and the state. Here, trust is framed not as emotional satisfaction, but as a rational, historically grounded choice, what Misztal (2013) refers to as structural trust. Interestingly, trust can also be articulated through indirect signals. A Delfi publication wrote: "*Vaccination rates are increasing. People are increasingly relying not on rumours, but on doctors' recommendations*" (Delfi.lt, January 28, 2022). This quote shows a shift in the prestige of information sources — a movement from emotional noise to expertise. In this case, trust is presented as a sign of social maturity, connected to the growth of information literacy. The expression of trust is also evident in narratives about civic initiatives and solidarity. LRT reported: "*More and more residents are joining volunteer organizations. Trust in the community is growing*" (LRT.lt, December 14, 2023). Such messages create an emotional background of stability, which, as Putnam (2000) notes, strengthens social capital, people trust each other and thus become more active citizens. From 2020 to 2024, the expression of trust in the media served as an important emotional and political strategy. This made it possible not only to overcome fear, but also to restore a logic of action based on facts, reliability, and collective resilience. As the analysis shows, trust is formed through vocabulary such as stability, reliability, and based on data, expert opinions, and emotional narratives about community and the actions of state actors.

The presented emotional analysis shows that the expression of emotions in Lithuanian media from 2020 to 2024 is not accidental. It clearly correlates with each portal's communication strategy, audience profile, and editorial values. Delfi, which aims to attract a broad audience, more frequently employs dramatization, expressive language, and emotionally charged headlines. Emotions such as fear and anger are most often conveyed through strong metaphors, hyperbole, and the inclusion of emotional reader comments. This creates emotional intensity which, according to Wahl-Jorgensen (2020), becomes the main currency in the attention economy. Meanwhile, 15min stands out for its strategy of contextualizing problems. Emotions here are typically articulated through structural questions, a diversity of opinions, and a focus on causes and solutions. Anxiety, hope, and anger in this portal's discourse are more often linked to an analytical perspective rather than raw emotional charge. This corresponds to Papacharissi's (2015) concept of affective public spheres, where emotions in the media function not as chaotic outbursts, but as mediated reflections on social injustice, political decisions, or the state of society. LRT, as a public broadcaster, adheres to a more restrained and institutionalized model of emotional expression. Here, trust, hope, and rational concern dominate. These are communicated through expert commentary, analysis, and information reliability. The emotional tone is most often stabilized rather than escalated. This aligns with the mission of a public broadcaster to provide objective information that serves the public interest. According to Coleman (2012), such a strategy helps normalize crises and reduce psychological tension in society. These differences can also be interpreted through the theoretical lens of media ecology. Postman (2005) emphasized that each media form creates a distinctive infosphere, meaning not only the content of information but also the field of its delivery, emotional tone, and technological context. Delfi, as a commercial portal, generates an environment of rapid and affective information consumption. 15min, as a hybrid platform combining commercial aims with quality journalism, balances between analytical reporting and emotional relevance. LRT, as a public broadcaster, operates with consistent values and emotional moderation. The expression of emotions in Lithuanian media is strategically regulated. It serves not only to convey news but also to shape the collective emotional climate, which influences civic engagement, political trust, and even social resilience. The media is not only a disseminator of information but also an emotional architect, creating what might be called the affective landscape of society.

Economic issues in the media are more than just the transmission of information. They are constructed as fields of meaning where interpretations, values, fears, and expectations circulate. According to the principles of critical discourse analysis (Fairclough, 2013), the media gives meaning to economic phenomena through semantic structures such as dominant vocabularies, oppositions, and recurring narratives, the function of which is to shape the audience's perception of social reality.

An analysis of economic texts on the portals Delfi, 15min, and LRT reveals frequently recurring semantic fields related to representations of economic security, such as:

- Crisis and threat, uncertainty: "*Residents are waiting for a second wave of crisis*" (15min.lt, November 14, 2022), "*World Bank warns: inflation could rise up to 20 percent*" (Delfi.lt, 2022 09 18), "*No one can say what will happen*

in three months" (Delfi, October 1, 2022). These examples reflect the paradigm of risk communication (Beck, 1992), where the economy is portrayed as constantly vulnerable.

- Support and reserves: "*The government introduces a two-billion-euro business support package*" (LRT.lt, December 2, 2021). Such formulations present state actions as a guarantee of protection in the face of economic unrest. This rhetoric aligns with the welfare state protection narrative (Wodak, 2015);
- Responsibility and saving: "*Residents must prepare for harder times. Save and give up unnecessary expenses*" (Delfi.lt, January 9, 2023). This signals a discourse of individual responsibility.

Alongside semantic cores, opposing dichotomies appear that structure the discourse and help to ideologically frame information (van Dijk, 1998). The most common include:

- Security vs. insecurity: "*The Ministry of Finance reassures that reserves are sufficient*" (LRT.lt, March 12, 2023) vs. "*The energy crisis threatens mass bankruptcies*" (15min.lt, October 20, 2022). This is an emotional framing practice where alternative messages are created depending on the source.
- Responsible governance vs. chaos: "*The government has a clear plan*" (LRT.lt, April 6, 2021) vs. "*Uncertainty and wavering over decisions spark panic*" (Delfi.lt, 2022 07 01).
- State vs. citizen: "*Stricter sanctions will be applied for undeclared income*" (15min.lt, January 19, 2024) implies a discourse of control in which the citizen becomes a potential source of risk.

These oppositions shape not only the perspective on economic decisions but also legitimize or delegitimize specific actors or strategies. According to Hall (1997), discourse oppositions help interpret a phenomenon as normal or dangerous, honest or distorted.

The discourse of economic security in Lithuanian media constructs the citizen as both an emotional and moral actor. On one hand, the citizen is positioned as a potential victim, experiencing "*blows*" and suffering from the "*storm*." On the other hand, they are given responsibility to adapt, plan, save, and anticipate. The emotional burden here is linked to a sense of individual guilt and duty - if one fails to cope with the crisis, it implies a lack of responsibility.

Metaphors also play an important role in shaping emotional impact. In the three main groups (see Table 16), the most frequent metaphors identified are:

- military metaphors: inflation front, defence plan, strategic reserves, etc.
- natural disaster metaphors: economic storm, avalanche, blow, etc.
- physical impact metaphors: crisis blow, punch to the gut, disrupted balance, etc.

The use of metaphors strengthens the perception that economic insecurity is a physical, bodily, and personally affecting threat that not only informs but also mobilizes.

Table 16. Analysis of Economic Security Metaphors

Type of Metaphor	Examples from the Media	Function in Discourse
Military metaphors	"*The inflation front is approaching dangerous limits*" (Delfi.lt, July 4, 2022); "*Economic defence plan*" (LRT.lt, December 11, 2022); "*Strategic reserves*" (15min.lt, January 3, 2023)	Mobilizes; creates a logic of threat; justifies control measures
Natural disaster metaphors	"*An economic storm hit the markets*" (15min.lt, March 18, 2023); "*The inflation avalanche reached Lithuania*" (Delfi.lt, August 30, 2022); "*Price blow*" (LRT.lt, May 5, 2023)	Depoliticizes; presents crises as natural phenomena; weakens the discourse of responsibility
Physical impact metaphors	"*Crisis blow to the gut*" (15min.lt, September 22, 2023); "*Disturbed balance*" (Delfi.lt, February 10, 2024); "*The economy stumbles after a blow*" (Delfi.lt, February 10, 2024)	Strengthens emotional identification; creates the image of a physical threat; reinforces empathy

Source: compiled by the author

The analysis of economic discourse shows that the media not only reports facts, but also actively shapes meaning through semantic fields, oppositions, and narratives. The emotional and semantic analysis of economic security narratives reveals that media discourse functions not only as a channel of information, but also as a tool for emotional management. Through metaphors, semantic cores, and emotional rhetoric, the media constructs both the image of economic

insecurity and structures civic expectations. In this way, the media becomes a significant discursive space where collective economic self-understanding is shaped.

This part of the analysis presents a detailed thematic and emotional discourse study of the three main Lithuanian news portals: Delfi, LRT, and 15min. It provides empirical support for the media's role in emotional framing on the topic of economic security. Based on the principles of critical discourse analysis (Fairclough, van Dijk), affective media theory (Papacharissi, Wahl Jorgensen), and media ecology (Postman), various emotional tones, semantic cores, discursive oppositions, and visual templates were identified. Changes in the frequency of emotions (see Figure 6) were revealed through quantitative analysis, supplemented by qualitative research on semantic fields. Each identified emotional component of discourse such as fear, anxiety, anger, trust, and hope were linked to a specific media strategy and communicative purpose.

This subsection identifies emotional strategies, semantic cores, metaphors, and narratives that support the role of the media as a builder of emotional architecture. These range from mobilizing fear-based discourse to narratives that promote hope and resilience. The subsection serves as an empirical bridge between theoretical models of media power presented in the earlier chapters, and their concrete manifestations in Lithuanian media practice.

Visual Representations of the Economic Security Discourse. The period from 2020 to 2024 in Lithuania was marked by an increased intensity of the economic security discourse in the media, driven by events such as the COVID-19 pandemic, Russia's war against Ukraine, and economic pressure from China. These challenges encouraged the media not only to inform, but also to shape the public perception of economic security through various visual means. Visual representations in the media are a key element of discourse that shape both the information itself and the emotional structure of the message. This aspect becomes particularly prominent during periods of crisis, conflict, or social uncertainty. As noted by Coleman (2012), visual content is not merely a supplement to textual information. It actively shapes emotional resonance, which influences how viewers interpret and evaluate what they see. In this context, it is essential to analyse how different media portals like Delfi, 15min, and LRT use visual strategies to convey themes of economic security, emotional tone, and narratives of institutional trust.

Studies of visual elements in communication increasingly fall under the scope of visual discourse analysis, an interdisciplinary method that makes it possible not only to describe the content of images, but also to reveal their symbolic, ideological, and affective potential (Machin, 2023; Rose, 2022). According to Pauwels (2006), visual narratives act as the core of discourse. They convey deeper collective meanings than individual textual units because they combine aesthetic, semantic, and emotional dimensions. This is especially relevant in economic security discourses, where visual material serves not only to illustrate but also to reinforce communication. Images help intensify the emotional weight of the message being conveyed. On the portals Delfi, 15min, and LRT, illustrations are often used with intense affective charge: empty store shelves, stern faces, military figures, or deserted cityscapes. Such visual rhetoric acts as a symbolic articulation of threat (Wahl-Jorgensen, 2020). According to Wahl-Jorgensen, the media functions as an emotional infrastructure where fear and uncertainty are not only reflected but actively constructed and transformed through symbolic signs and visual codes. One example is a 2023 visualization published by 15min.lt about inflation, which used the symbolic image of a "*price avalanche*": falling coins above empty human hands. This visual does not merely convey informational content, but also creates an emotional background tied to helplessness. Another example is the LRT article titled "*Is a recession coming?"* (LRT.lt, October 14, 2023), illustrated with an image of an empty supermarket shelf. This visual metaphor evokes associations with economic insecurity, and reinforces the impression that crisis is inevitable. See Figure 7.



Figure 7. Visual Motifs of the Economic Security Discourse in Lithuanian Media (simulated collage)

Source: Created with generative AI based on a ChatGPT prompt, May 5, 2025

According to Ahmed (2013), emotions "*stick to objects*" – empty store shelves become a sign of fear. The Delfi.lt article "*Inflation has emptied our pockets: what else can we still save?*" (Delfi.lt, January 4, 2023) features a photo of a worried elderly man standing at a checkout with only a few items in his hands (see Figure 10). This visual presents the face of economic pressure while simultaneously implying an emotional narrative of vulnerability. The image serves an affective function – it generates empathy and social concern, while also contributing to a climate of structural anxiety (Coleman, 2012). For example, in a Delfi article from 2022 about the energy crisis, a photo showed an elderly woman dressed in black sitting in the cold next to an unheated radiator (Delfi.lt, November 14, 2022). The image conveys not only factual content but also a strong emotional signal – economic insecurity becomes visually tangible through human suffering. This kind of imagery strengthens the written message about the need for action and mobilizes empathy and concern. Another Delfi.lt article from 2022 on the energy crisis was illustrated with a sombre image of an elderly woman sitting in darkness by candlelight (Delfi.lt, December 14, 2022). This visual choice (see Figure 7) not only complements information about rising energy costs, but also intensifies the emotional impact, the viewer experiences an empathetic reaction to social injustice. The visual codes communicate cold, loneliness, and injustice – emotional meanings that text alone cannot convey. In a 15min.lt article published on January 20, 2023, discussing the effects of inflation, an image features product price tags with red "*sale*" signs alongside a reference to the "*psychological blow*" to household budgets. This visual metaphor not only illustrates rising prices but also symbolizes aggressive economic pressure (see Figure 7). As Machin (2023) notes, such visuals employ "*commercial semiotics*" to create not just an informational message but also a physically felt impression.

One of the main features of visual militarization in Lithuanian media is that even neutral topics are illustrated with images that convey emotional tension or symbolic threat. For example, in the 15min article "*Is mobilization approaching? What the national defence plans reveal*" (15min.lt, December 1, 2022), the illustration shows a Lithuanian soldier with a serious expression standing near military equipment at a base. Although the text discusses preventive measures, the image implies military tension. This visual choice creates an emotional atmosphere aligned with the practice of "*symbolic threat articulation*" – where even neutral news is visually framed as dangerous (Papacharissi, 2015). Images not only intensify the emotional weight of the texts, but also shape how the audience perceives economic, military, or social threats. Visual language becomes part of affective discourse, where emotion is not a consequence but a deliberately constructed outcome. The analysis of visuals also reveals a militarized imagery, especially after 2022 when the war in Ukraine began. Images featuring NATO symbols, armed forces, or armoured vehicles have become common even in economic news related to security guarantees or budget allocations. Such visual codes strengthen collective identification and foster trust in state institutions (Buzan et al., 1998).

An analysis of visual strategies across different media outlets reveals a clear direction in militarization narratives – images serve as a tool of communication through which the priority of national security is reinforced. In the Delfi article "*Defence funding increases: how much does security cost?*" (Delfi.lt, March 6, 2023), the featured image shows uniformed soldiers marching in front of Lithuanian and US flags. Although the topic concerns budget decisions, it is visually framed as a matter of strategic alliance reliability. In a 15min publication titled "*Energy independence – not only an economic but also a defence issue*" (15min.lt, May 9, 2023), a photograph shows armoured vehicles driving alongside a gas pipeline. This synthesis of infrastructure and military power conveys a security narrative on the visual level – as if economic assets must be physically defended. In the LRT article "*NATO brigade in Lithuania: a political signal or real protection?*" (LRT.lt, November 28, 2022), the image shows armoured transport at the Kėdainiai training ground marked with a NATO symbol. The image immediately suggests not only military readiness, but also a systemic vision of international cooperation in ensuring security. Another example is the Delfi photo feature "*Iron Wolf exercises: where the economy meets security*" (Delfi.lt, October 15, 2022), which includes images of soldiers near railway infrastructure – visually implying that even logistics is considered a strategic defence point. Finally, the LRT report "*Defence industry in Lithuania: can we become a regional hub?*" (LRT.lt, February 22, 2024) presents an image of an ammunition production line assembled under national symbols. In this way, even industrial economics is visually militarized, shaping a collective narrative of security through manufacturing capability and state preparedness. These visuals serve not only to inform but also to establish political meaning – they align with what Buzan et al. (1998) define as a "*securitization act*," where specific phenomena are framed as threats that justify extraordinary measures. Visual decisions become an integral part of this process, giving concrete form to abstract security concepts and mobilizing viewers for emotional support.



Figure 8. Visual Codes of Militarized Discourse in Lithuanian Media (2020–2024)
Source: Created with generative AI based on a ChatGPT prompt, June 10, 2025

The figure titled "*Visual Codes of Militarized Discourse in Lithuanian Media (2020 to 2024)"* (see Figure 8) illustrates the key affective and semantic directions that dominated the media when discussing economic security during times of crisis and geopolitical tension. Images showing armed soldiers, NATO symbols, armoured vehicles, or deserted spaces function not only as documentary tools, but also as ideological representations that activate emotional resonance and strengthen collective identity. As Barthes (1977) notes, photography is "*not objective truth, but a coded message that naturalizes ideology*" (p. 45). In Lithuanian media, such images often frame even economic news through a security lens. For example, a Delfi article on the defence budget includes an image of soldiers marching alongside US and Lithuanian flags, with the headline "*Defence funding is increasing: what is the cost of security?*" (Delfi.lt, March 6, 2023). Here, the image does not simply inform about budget decisions but instead constructs an impression of strategic alliance reliability and national strength. In an LRT publication titled "*NATO Brigade in Lithuania: Political Signal or Real Protection?*" (LRT.lt, November 28, 2022), the visual of an armoured vehicle at a military training ground supplements the text, which states, "*This presence sends a message to both partners and adversaries – Lithuania is not alone.*" This shows that visuals not only inform but also symbolically reinforce collective security and support from Western allies. A 15min article on energy independence features a soldier standing next to a gas pipeline ("*Energy independence is not only an economic but also a defence issue*," 15min.lt, May 9, 2023), and the text explicitly states, "*Energy has become a strategic asset whose protection is not only an economic but also a military necessity*." This case effectively reflects the securitization theory by Buzan et al. (1998), which explains that discourse can frame any issue as a threat that demands extraordinary protective measures. Emotional visual communication operates through the mechanism of identification. In a Delfi photo feature on the "*Iron Wolf*" military exercise ("*When the economy meets security*," Delfi.lt, October 15, 2022), soldiers are shown next to railway infrastructure. This montage symbolically illustrates that even transport infrastructure becomes a security object. It conveys what Papacharissi (2015) calls "*visual mobilization*," where an emotional image activates collective responsibility. In an LRT article about the defence industry ("*Can We Become a Regional Centre?"* LRT.lt, February 22, 2024), an ammunition assembly line is shown with Lithuanian national symbols. This type of visual rhetoric conveys not only economic development, but also the state's capacity for defence – the economy is visually militarized. These examples show that militarized visual codes in Lithuanian media serve a multi-layered function. They inform, mobilize, symbolically affirm threats, and justify state responses. In this way, the media not only shape public opinion, but also participate in constructing national identity, political loyalty, and emotional resilience.

In 2023, an article published on the LRT portal about controlling inflation was illustrated with a photograph showing a cabinet meeting, where the flags of the European Union and Lithuania are visible in the background (LRT.lt, June 22, 2023). Visually, this signals institutional stability, solidarity with the EU, and reliability, while simultaneously subduing the threat of crisis through the image of rational governance. According to van Leeuwen (2008), such images shape a discourse of authority, in which the state is portrayed as a competent force for managing threats. In another LRT.

lt publication about the increase in the Lithuanian Armed Forces budget (April 10, 2023), a photo was used showing the NATO flag, tanks, and Lithuanian soldiers standing in orderly formation. This image articulates defence readiness, trust in institutions, and a visual representation of the state's capacity to protect its citizens. As Barthes (1977) notes, this is not merely information but a myth that conveys collective codes of trust, strength, and identity. Another example comes from a 2023 article in 15min about public sentiment in the context of war threats ("*Lithuanians fear more than they hope*," March 20, 2023), which features a photograph of a column of war refugees at a border. Visually, this evokes associations with instability and vulnerability, which, according to Bradley (2021), is a characteristic of emotional visual communication, it is not words but images that embody the feeling of insecurity. This visual choice conveys the humanitarian aspect of the crisis and intensifies the emotional tone. These examples show that visual elements do not act as passive additions to content, but as active instruments of meaning-making. Visual analysis makes it possible to identify the underlying cultural codes and ideologies that shape collective understandings of economic security. As Perloff (2021) observes, in today's media environment visual narratives often become more powerful than textual ones, they shape identities, mobilize action, and structure political imagination. For this reason, visual elements have become an integral part of the discourse on economic security.

According to Barthes (1977), a photograph is not a document of truth but a cipher of cultural code that conveys ideological content. In the context of Lithuanian media, this code often aligns with the logic of national resilience, rational governance, and collective control. This is particularly evident on the LRT portal, where visual material is closely tied to institutional communication – illustrating conferences, expert consultations, and officials' speeches. Such images not only convey information but also function as a form of naturalized ideology, in which rationality and control are perceived as self-evident responses to crisis. For example, in the LRT article "The President: Lithuania must be prepared for prolonged tensions" (LRT.lt, February 18, 2023), the published photograph depicts President Nausėda next to the Lithuanian flag, speaking in front of the "*State Defence Council*" logo. This kind of visual symbolism conveys strategic stability. In the article "*Experts discussed threat management as the most important thing is to avoid panic*" (LRT.lt, October 20, 2022), an expert is shown a table, microphones, serious faces, and a discussion format. The photograph implies the dominance of rational discourse. In this context, the media not only transmits facts, but also visually reinforces an atmosphere of order, analysis, and competence. Another example, "*Defence and energy remain priorities in budget discussions*" (LRT.lt, November 7, 2023), shows the Minister of Finance speaking from a podium with numbers and graphs displayed on a screen. The visual context conveys expert rationality rather than an emotional reaction. These examples demonstrate that the LRT portal uses visuals as discourse stabilizers. In contrast to commercial media such as Delfi or 15min, where affective dramatization dominates, the public broadcaster constructs visual narratives based on structured institutional actions (see Figure 9). In this way, photographs become a "*cultural lexicon*" (Barthes, 1977), through which the state's rationality, strategic governance, and restoration of emotional balance are communicated. Clear differences in visual expression emerge across the portals. Delfi and 15min more often employ contrasting, emotional, and dramatic imagery such as emptiness, shock, or protests, whereas LRT prioritizes a more restrained visual style – official portraits, state institutions, and neutrally stylized graphics. These represent two opposing directions in media representation: affective dramatization and institutional rationality. The emotional scene, a stern or worried human face, conveys anxiety, anger, or fear. This reflects the tendency of commercial portals (Delfi, 15min) to rely on visual shock for emotional impact. Meanwhile, codes of institutional trust, such as a minister with a graph on screen or expert discussions, are characteristic of LRT's style. According to Barthes (1977), this constructs a "*naturalized myth of rationality*." Perloff (2021) notes that the public broadcaster is more likely to use stabilizing visual narratives, while commercial media images create what he calls a "*density of emotions*." This comparison reveals that the image is not a neutral medium. It shapes the viewer's relationship with the message, the perceived threat, and institutional actors. These differences reflect the principles of media ecology developed by Postman (2005), where each media environment creates its own information field, an informasphere, that regulates both the content of information and its emotional expression.

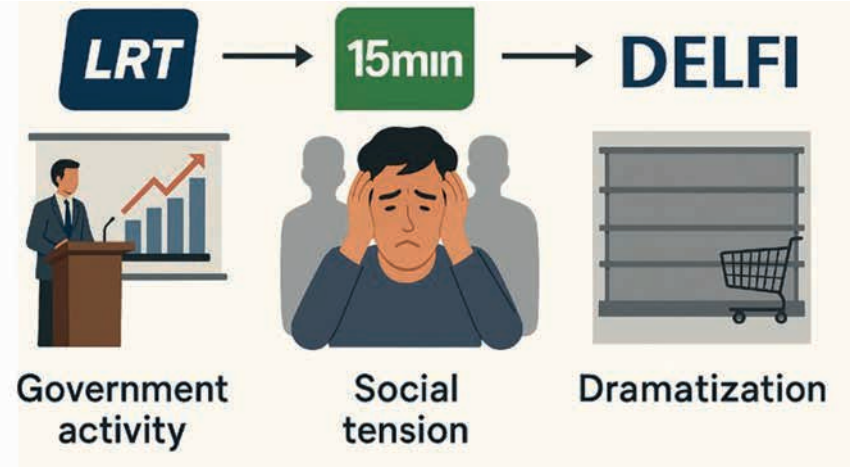


Figure 9. Distribution of Visual Representations in Lithuanian Media (2020–2024)
Source: Created with generative AI based on a ChatGPT prompt, June 10, 2025

The visual quote table (see Figure 10) presents examples of semantically significant excerpts from media content and contextualizes their visual representation by highlighting their affective impact. According to Barthes (1977), an image is inseparable from cultural code. It does not convey objective reality but instead delivers an ideological message. In this table, visual fragments become symbolic codes of fear, uncertainty, or trust. Pauwels (2006) notes that visual media enables the quoting of not only texts but also emotions. This is precisely what occurs when a textual quote is paired with a specific visual form. As Perloff (2021) argues, visual quotes amplify a message through a recognizable image that embeds emotional experience into collective memory.



Figure 10. Visual Quotations: Articulation of Emotional Narratives in the Media.
Source: Created with generative AI based on a ChatGPT prompt, May 5, 2025

The visual analysis of economic security discourse reveals that in Lithuanian media from 2020 to 2024, visual elements served not only as illustrations, but also as active tools for shaping semantic and emotional meaning. Visual codes, ranging from dramatized emotional portraits to images of institutional decision-making, functioned as cultural symbols that structured narratives of threat, trust, or vulnerability. On the portals Delfi and 15min, affective dramatization dominated, while LRT followed a line of visual rationality that reinforced the image of state stability and control. These tendencies indicate that visual codes are an integral part of the economic security discourse through which the media not only reflects but actively shapes public understanding of threats and possible responses. In this way, the third objective of the monograph has been fulfilled: an analysis of the discourse on economic security narratives in Lithuanian media has been conducted, highlighting their visual aspects and the differences between public and commercial media strategies.

This provides not only empirical support for theoretical reflections on media power but also allows for an assessment of how the media functions as an ideological filter that shapes collective risk imagination, public trust, and political stability.

The analysis of economic security discourse in Lithuanian media between 2020 and 2024 was based on the methodological framework of critical discourse analysis (Fairclough, Wodak, Jäger), supplemented by quantitative data and semantic narrative analysis. The research revealed how the media outlets LRT, Delfi, and 15min construct the concept of economic security, the dominant ideological and emotional narratives within it, and how these are visually represented. A typology of five economic security narratives was developed, grounded in semantic, pragmatic, and institutional aspects of discourse. The identified narratives such as threat, stability, individual responsibility, enemy identification, and sustainability and transformation were classified according to thematic cores, dominant actors, plot structures, and value judgments. The threat narrative, which was the most frequent (43 articles out of 112, or 38.4 percent), is framed through themes of risk, vulnerability, and geopolitical tension. The stability narrative (24.1 percent) highlights the state's readiness to respond to economic challenges through support packages, the importance of strategic reserves, and responsible budget management. The individual responsibility narrative (16.1 percent) reflects the logic of neoliberal ideology, in which security is transferred to the realm of citizen competence. The enemy identification and sustainability narratives make up a smaller but significant part of the discourse; they shape representations of external enemies (such as Russia) and long-term systemic readiness for economic transformation. The emotional and semantic weight of the narratives was examined in detail. An analysis of evaluative elements (see Table 8) and metaphorical models (see Table 9) showed that economic security in the media is constructed through emotional vocabulary and visual imagery. The threat narrative features militarized metaphors ("*the front line of inflation*"), natural disaster metaphors ("*economic storm*"), and physical metaphors ("*crisis blow*") that generate a sense of insecurity and mobilize audiences. In contrast, the stability narrative is formed through calming language ("*state reserve*", "*support package*") that conveys the state's capacity to act systematically and with social responsibility. The individual responsibility narrative is dominated by moralizing metaphors ("*live within your means*", "*financial backbone*"), which imply that economic well-being depends on personal choices rather than structural decisions. The emotional coding of narratives operates as part of the ideological discourse, allowing the media not only to inform, but also to cultivate behavioural norms, incentives, and social responses. The visual analysis of economic security narratives demonstrates how visualizations function as a discursive tool, enhancing narrative credibility, the impression of objectivity, and emotional impact. This is accompanied by semantic analysis, which revealed that visual expression through colour, proportion, and symbols often reinforces and amplifies textual narratives, particularly in the context of threats or measures to ensure state stability. This analysis shows that the media functions not only as a transmitter of information, but also as a constructor of visual ideological discourse. In summary, economic security in Lithuanian media from 2020 to 2024 is not presented as a neutral or homogeneous discourse, but as a semantically and ideologically multifaceted phenomenon. Narratives of threat, responsibility, and trust are constructed through symbolic, emotional, and visual codes that not only convey information but also mobilize the audience, reinforce behavioural norms, and elevate expectations of the state. These narratives form the core of media discourse through which economic uncertainty, government agency, and the role of citizens in ensuring security are articulated.

The Impact of the Economic Security Discourse on Public Communication and Perceptions of Social Security

Economic Security Discourse as a Framing Tool in Public Communication. The discourse of economic security in the media functions as a tool for structuring information and meanings, it not only conveys economic issues but also frames how they are understood, what threats are highlighted, and which responses are considered legitimate. In public communication, discourse defines what can be spoken about, how it is labelled, and which semantic emphases are deemed legitimate. The discourse of economic security shapes a semantic and value-laden field in which economic problems, crises, and solutions acquire specific content, tone, and interpretative direction. Framing in this context is understood as a process through which social reality is structured via linguistic, symbolic, and visual means. As Entman (1993) notes, "*framing means selecting some aspects of a perceived reality and making them more salient in a communicating text, to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation*" (p. 52). In this sense, the media not only transmits information, but structures the audience's worldview.

Two theoretical models are most often applied when analyzing political communication in the media: framing theory and discourse theory. Although these approaches are often interlinked in academic literature, Roslyng and Dindler (2023) examine how they differently conceptualize media power and political expression. Framing theory analyses how issues are interactively formed, how they are presented in media, and how they are interpreted in the political decision-making space. While some studies grounded in framing theory address aspects of structural or hegemonic power, its tendency to focus on overt interactions limits sensitivity to systemic exclusion. In contrast, discourse theory, based on a post-foundational understanding of politics, views media discourses as antagonistic, mutable, and open to transforma-

tion. It expands the understanding of media power by incorporating subversive positions outside hegemonic structures. It is argued that both framing and discourse theories carry theoretical and analytical implications in media research, and that theoretical sensitivity increases the analytical distinctiveness of these approaches (Roslyng & Dindler, 2023).

The framing function is reinforced by metaphors used in the media (e.g., "*economic storm*," "*inflation front*," "*crisis blow*"), which translate abstract economic processes into sensory, emotional, and visual contexts. These metaphors are not neutral - they frame economic challenges as natural disasters or battles requiring preparation, sacrifice, and victory. Lakoff (2014) asserts that metaphors are not merely stylistic devices but fundamental structures of political imagination, shaping how people understand the world and what kinds of decisions they expect.

Metaphors play a crucial role in structuring the discourse of economic security in the media. Analysis of the economic security discourse in Lithuanian media shows that natural disaster metaphors are widely used and significantly impact audience emotions and decision-making. For example, in a Delfi article titled "*Inflation Blow: How to Survive an Expensive Winter*" (December 15, 2021), inflation is depicted as an unexpected blow that, like a natural force, reduces consumers' purchasing power and creates a general sense of uncertainty. Similarly, the LRT.lt article "*Crisis Blow: State Budget Reform as a Response to Economic Instability*" (March 15, 2022) employs rhetoric that portrays the economic crisis as an uncontrollable force capable of "*striking*" the entire economy, emphasizing the need to respond quickly to economic challenges. Additionally, in the 15min.lt article "*Business Warnings: An Economic Storm is Coming - Prepare for Surprises*" (January 25, 2023), a storm metaphor is used, comparing market fluctuations to a natural storm and urging actors in the business sector to take urgent precautionary measures. Finally, the Delfi article *"Investment Storm: How Do Investors Respond to Uncertainty?"* (May 10, 2024) presents an analysis of the investment context, in which the term *"storm"* symbolizes the recurring economic fluctuations that shape investor anxiety and prompt calls to strengthen market resilience. The discourse of economic security frames economic conditions and shapes public perception: it determines which challenges are considered most significant, who is held responsible for them, and which values should prevail in decision-making.

In the article titled "*Investment Storm: How Investors React to Uncertainty?"* (May 10, 2024), the investment context is analysed, where the metaphor "*storm*" symbolizes the constantly rising economic fluctuations that generate investor anxiety and highlight the need to strengthen market resilience. The economic security discourse describes economic situations and shapes public perceptions: it defines which challenges are considered most important, who is responsible for them, and what values should dominate decision-making.

Scheufele (1999) defines framing as "*the process by which communicators, consciously or unconsciously, construct a point of view that encourages the facts of a given situation to be interpreted by others in a particular manner*." This reveals the dual nature of framing as both a strategy of message construction and a model of information reception and interpretation. Scheufele distinguishes between media frames and audience frames, indicating that discourse structures are shaped both in production and reception. For instance, in the Delfi article "*Energy Price Spike: Businesses Seek Solutions*" (November 10, 2022), the frame of a "*spike*" conveys a sudden and unexpected rise in prices. This metaphor presents the increase in energy costs as a sudden and dangerous event that could have serious consequences for businesses. This is an example of media-level framing aimed at emphasizing the seriousness of the situation and prompting readers to reflect on potential consequences. Meanwhile, at the audience level, readers, depending on their experience and values, may interpret this information differently. For example, a business owner facing rising costs may perceive the "*spike*" as a threat to their business stability, while a regular consumer may see it as a sign of upcoming price increases and the need to save. This example illustrates how media framing and audience interpretations interact to shape public perceptions of economic security. Scheufele's model allows us to see that the media and the audience are not merely one-way transmitter and receiver of information, but rather interacting structural poles where framing works bidirectionally. Therefore, in analyzing the discourse of economic security, it is essential to consider both content formation and how it is received, reinterpreted, and integrated into broader societal meaning-making.

Iyengar's (1994) typology of episodic and thematic framing helps further explain how the media structures the discourse of economic security. Episodic framing presents issues as individual, isolated events or situations, whereas thematic framing treats them as part of broader, structural, and systemic phenomena. This distinction is relevant when analyzing the media's role in interpreting economic threats: episodic narratives often personalize the issue, eliciting emotional responses, but may obscure deeper causes. For instance, the Delfi.lt article "*Explained Why Services in Lithuania Are Getting More Expensive than Goods: Not Just Inflation to Blame*" (April 24, 2023) uses episodic framing, discussing isolated examples of service price increases, offering citizen observations, and referring to specific sectors (e.g., hair salons, car repair shops), while avoiding systemic analysis. In contrast, the LRT.lt article "*Lithuania Does Not Stand Out in Terms of Price Spikes, but Inflation Persists - Why*?" (September 14, 2023) applies a thematic frame: inflation is analysed at the macroeconomic level, comparing data across countries, evaluating fiscal policy, and including expert commentary on causal relationships. Such analysis allows the audience to reflect on deeper processes and thereby avoid emotional

oversimplification. Therefore, the difference between episodic and thematic framing directly affects how the audience interprets economic security issues, which is either as individual experiences or as systemic challenges.

Another important aspect is highlighted by Chong and Druckman (2007), who argue that the influence of framing on public opinion depends on context and competition between alternative frames. According to them, "*a frame in communication can be defined only with reference to a specific issue, event, or political actor*," meaning that framing is not a static phenomenon, it is a dynamic and interactive process taking place within ongoing discursive interaction (Chong & Druckman, 2007, p. 112). Various actors such as politicians, experts, journalists compete over which interpretation will become dominant, and audience reactions depend on the structure of this competition and its interaction with the audience's preexisting attitudes. This theoretical assumption is illustrated by the LRT.lt article "*Experts: Lithuania's Energy Security has Improved, but Prices and Risks Remain*" (April 21, 2023). Here, two competing frames coexist: on one hand, expert rhetoric constructs a frame of stability and progress, emphasizing the success of infrastructural decisions and diversification of supply sources ("*Lithuania avoided dependence on a single supplier*"); on the other hand, a frame of threat and uncertainty highlights high energy prices, long-term geopolitical tensions, and consumer vulnerability ("*risks remain, especially due to market fluctuations*"). These frames generate semantic tension in the same discursive space, requiring the audience to choose which interpretation to prioritize. Under such conditions, the framing of economic security becomes a political technology that shapes public evaluations, emotions, and strategies of action. As Chong and Druckman note, competing frames can "*cancel each other out or reinforce existing attitudes, depending on the audience's political orientation, information engagement, and trust in the information source*" (ibid.). This is particularly relevant in a democratic society, where public discourse acts as an ideological space, and frames serve to structure public imagination regarding threats, responsibility, and the legitimacy of decisions.

The historical foundation of the framing concept was developed by Goffman (1974), who in his classic work Frame Analysis defined frames as "*interpretive schemas that enable individuals or groups to identify and classify events and facts.*" According to Goffman, frames are essential units for organizing everyday social experience, they allow reality to be "*sorted*" into meaningful categories, providing order to social life and indicating what kind of action or evaluation a phenomenon requires. His theoretical basis became foundational for contemporary studies in communication, sociology, and cultural studies, examining how social actors construct meanings in various contexts. In today's media landscape, Goffman's (1974) frame theory remains relevant, especially in analyzing both textual and visual or symbolic elements of discourse. A strong example is the 15min.lt article "*Crisis Is Not the End: Another Shock May Be Coming - Where Might Prices Rise?"* (February 16, 2024), which includes a visual illustration of power lines against a dark sky with lightning effects. Such visual coding activates the natural threat frame, in which the economic phenomenon is presented as an uncontrollable force akin to a natural disaster. Applying Goffman's logic of interpretive schemas, this visual structure helps the audience perceive the topic as "*dangerous*" or "*unmanageable*" and primes an emotional response pattern in advance. These frames convey meaning and organize social experience, in Goffman's terms, allowing individuals or groups to "*place*" a phenomenon into a familiar category, from which behavioural strategies or value positions can be derived. In this case, the visual metaphor reinforces the textual rhetoric and serves as a rapid cognitive cue that structures the understanding of economic security problems through emotional interpretation.

This brings us back to Goffman's idea that an interpretive schema is not merely a passive filter but an active model of social action. These studies show that Goffman's theory remains vibrant, yet today it is interpreted in an expanded way. Frames are structures of cultural meaning and products of the media ecosystem, shaping both individual and collective worldviews.

Recent research reveals that even subtle differences in framing can have significant impacts on public opinion. According to Berk (2025), "*discourse frames, even when facts are identical, cause significant differences in respondents' opinions about the legitimacy of decisions.*" This is especially relevant when discussing economic security: the frames presented in the media not only inform but also establish emotional attitudes, moral positions, and political priorities. For example, in the LRT article "*Šimonytė: The State Budget had to be Drafted as if in Wartime*" (December 7, 2023), the financial decisions are contextualized through a crisis mobilization frame. This rhetorical frame, which compares budget planning to wartime governance, implies a logic of exceptional circumstances: the need for sacrifice, unity, and the suspension of normal processes. Such framing enhances the legitimacy of decisions, as it justifies even strict or unpopular measures by appealing to collective responsibility and survival logic. In contrast, in relation to the same budget, some commentators on Delfi used frames of inaction and fragmentation, emphasizing that the budget measures were inadequate for the scale of inflation or failed to address social injustice. Thus, with the same facts we have the budget draft and inflation indicators as different frames construct distinct evaluative contexts: for some, it represents necessity and responsibility; for others, political inertia and inefficiency. These examples clearly show that the discourse of economic security is not neutral but rather it is an ideologically and rhetorically structured field in which frames significantly influence how citizens assess the legitimacy, moral weight, and political effectiveness of decisions.

In addition to textual constructions, visual elements in the media also play a critical role in shaping the discourse of economic security. For instance, the illustration accompanying the LRT article "*Šimonytė: The State Budget had to be Drafted as if in Wartime*" (December 7, 2023) features the Prime Minister with a serious, focused expression, with national flags in the background and a neutral or dark colour palette - signalling seriousness, tension, and the weight of responsibility. The visual frame reinforces the textual one, the "*wartime*" metaphor is visually anchored. This allows the reader to associate budget decisions with survival, defence, or national stability. In this way, the mobilization security frame is activated, strengthening the sense of necessity and inevitability. Visual rhetoric can also be used to construct polemical or critical frames. In commercial media (e.g., Delfi or 15min), articles about budget deliberations often include illustrations showing lines of people at social services offices, empty wallets, or downward-trending graphs. These images reinforce frames of uncertainty, decline, or exclusion, which create a different emotional logic than the state's communication frames, clearly, they are visual tools meant to influence perception without direct evaluation. Visual elements in public communication function as additional (sometimes even primary) meaning structures, relying both on rational interpretation and rapid emotional reaction. In this way, the economic security discourse operates on a multi-layered level: through text, imagery, and emotional semiotics.

The impact of the economic security discourse can be asymmetrical: even when economic indicators are objectively improving, the tone of public communication may remain pessimistic, creating a distorted collective assessment of the economic situation. This disproportion between the actual situation and its discursive representation may be influenced by editorial choices, political agendas, market pressures, or algorithmic information logic. Asymmetric framing becomes particularly evident before elections or during budget negotiations, when the media intensifies communication about uncertainty, risk, and threat. For instance, even if Lithuania's GDP is growing and unemployment remains stable, some outlets feature headlines such as "*Price Collapse Continues: Can Residents Survive Another Winter?"* or "*Finance Ministry Playing with Fire*." Such framing operates on an emotional level, eroding trust in decision-makers and potentially provoking pessimistic public attitudes even when indicators are objectively favourable. This may create a feedback effect on the economy, it affects consumer behaviour, investor expectations, and institutional trust. If public communication is dominantly negative, people may start saving more, consuming less, and businesses may delay expansion plans, thus reinforcing a "*self-fulfilling crisis*" mechanism. In this way, the media, even without intent to manipulate, becomes an active structurer of economic behaviour. This phenomenon is known as negativity bias in media framing, the tendency to highlight negative aspects as more engaging to audiences. Over time, this can distort public opinion and limit rational decision-making at both voter and policymaker levels.

Wicke and Bolognesi's (2020) study showed that "*rhetorical constructions not only convey information but act as emotional keys, mobilizing particular public responses*" (p. 235). In the context of economic security, this effect is realized through metaphors ("*storm,"* "*crisis front*"), oppositions ("*us / them*," "*government / citizen*"), and other linguistic models that structure public communication not only semantically but also affectively. These rhetorical constructions create cognitive frames within which information is both interpreted and emotionally evaluated. Metaphors like "*storm*" or "*exploding inflation*" present economic processes as sudden, threatening, and uncontrollable events that endanger the community. Meanwhile, oppositional frames (e.g., "*the government isn't helping*," "*business is greedy*") not only define the distribution of responsibility but also embed evaluative hierarchies in which some groups are positioned as sources of the problem and others as victims. Emotional framing intensifies especially during times of crisis. For example, during the 2022 energy crisis, the media often used phrases like "*shock may strike in winter*" or "*Lithuanians' test - will we survive without gas?"* which not only informed about challenges but also mobilized emotions of anxiety, stress, and defensiveness. This creates an affective background in which decisions become more acceptable if they align with dominant emotional attitudes. Rhetorical frames are inseparable from political consequences, they can legitimize unpopular decisions ("*crisis justifies restrictions*"), reinforce polarization ("*we are responsible, they are dangerous*"), or encourage symbolic solidarity ("*we all need to tighten our belts*"). These linguistic models do not merely transmit information about the economic situation—they shape its emotional logic, determining how society perceives risk, institutional trust, and the legitimacy of action. In this way, the media becomes not only a producer of information but also of emotions, and frames act as both semantic and affective structures shaping the collective sense of security or its absence.

The discourse of economic security in the media functions as a powerful tool of public communication framing that not only delivers information, but also shapes societal understanding of the economic situation, potential threats, and preferred models of response. It acts as a cognitive schema that frames various economic phenomena through recurring semantic structures: uncertainty, crisis, threat, resilience, stability. These concepts become not just components of information but semantic anchors that establish certain problems as "*real threats*" or "*societal priorities*." Thus, discourse constructs not only the content of messages but also the modes of perception for the audience.

The discourse of economic security also includes normative content; it conveys not just what is happening but how things ought to be. For example, when discourse emphasizes "*responsible governance*," "*support packages*," or "*state*

reserves," it creates an image of the state as a caring and rational actor. This narrative is clearly embodied in the LRT article "*Navickas: The State Cannot Withdraw from the Economy - We Have Had and Will Continue to Have Our Role*" (September 2023) which stresses the active role of the state in stabilizing the market, providing financial assistance, and ensuring long-term security. This narrative reinforces the frame of state guardianship, in which the government is seen as the primary guarantor of economic order and citizen welfare. Simultaneously, when discourse includes appeals to "*citizen preparedness*," "*financial backbone*," "*responsible consumption*," or the importance of "*private savings*," it activates a frame of individual responsibility, portraying the citizen as an active co-creator of security. For example, in Delfi publications, rhetoric often encourages people to "*make smart financial decisions*," "*create personal budgets*," or "*avoid excessive consumption*," especially during periods of economic volatility. In this way, citizens are positioned as responsible subjects, security is not only granted to them but demanded through behaviour. Between these two frames, state responsibility and individual responsibility, social tensions emerge: how much should the state care for its citizens, and how much should individuals adapt? These discourse components often act as normative stances that define what is considered "*proper behaviour*" and what is seen as social risk. Thus, economic security communication is not merely informative but also regulatory. It shapes social expectations and the boundaries of political action.

Discourse frames also determine the rhythm of public communication. During crisis situations, narratives of threat prevail; rhetoric of stability strengthens during political cycles or efforts to justify decisions; while the individual responsibility frame is activated during economic austerity or reform periods. This discursive dynamic shows that public communication is not spontaneous, it depends on entrenched linguistic models, media logic, and ideological contexts. According to Entman (1993), "*the media tends to overrepresent threats during crises, and during periods of stability, it shifts to normalization and restoring political trust."* This is confirmed by Shumov's (2012) analysis of media responses to crises, which showed that media attention follows an emotional cycle-from shock and dramatization to rationalization and allocation of responsibility. During periods of economic decision-making, especially amid reforms or budget consolidation, public discourse often activates a neoliberal frame of individual responsibility, encouraging citizens to "*adapt*," "*be responsible*," or "*assume risks*" (O'Connor, 2017). Meanwhile, before elections or on national holidays, narratives of collective stability and "*social cohesion*" intensify this, according to Hallin (1989), is part of the so-called "*window of consensus discourse*," which helps maintain symbolic state power. These studies suggest that public communication about economic security is shaped through consistent discursive phases that reflect not only the logic of events but also institutionalized media templates of interpretation. Thus, the media not only reacts to economic developments but also structures the rhythm of their perception creating sequences, escalating, calming, legitimizing or delegitimizing decisions in a particular linguistic and emotional form.

The economic security discourse in the media shapes public understanding. It defines which challenges are considered most important, who is responsible for them, and what values should dominate in decision-making. The discourse of economic security is not merely a mode of information transmission - it is a normative, emotionally structured system in which the media and the audience jointly construct images of threats, responsibility, and desirable responses. The structure of discourse determines not only how economic situations are understood but also how individuals, politicians, and society as a whole respond to them.

The Ideological Impact of Discourse: From Information to Emotional Mobilization. The discourse of economic security in the media is not limited to the delivery of information, it also performs ideological and emotional functions by structuring not only how economic phenomena are spoken about, but also how they are evaluated, experienced, and which behaviours are considered normatively desirable. This discursive power is realized through frames, metaphors, moral oppositions, and emotional-semantic structures that not only shape meanings but also legitimize certain strategies of action. The ideological impact of discourse implies that language reinforces certain values, power relations, and worldviews that become "*natural*" or "*self-evident*" (Fairclough, 2013; Žižek, 2009). For instance, when the LRT portal published "*Šimonytė: the State Budget had to be Prepared as if for Wartime*" (December 7, 2023), a militarized frame is used that presents budget policy as a survival strategy allowing unpopular decisions to be justified through the rhetoric of "*necessity*" and "*unity*." In doing so, a model of state guardianship is conveyed, where citizens are urged to submit to the "*logic of economic warfare*." Conversely, the Delfi portal frequently employs moral oppositional frames, such as in the article "*The Government Does Not Help: Citizens Must Save Themselves from Inflation*" (2023-10-21), emphasizing the state's inadequate response and shifting responsibility to individuals. Thus, the discourse constructs not only factual content but also normative evaluations: who must act, who is to blame, and who is the victim. According to Fairclough (2003), language here functions as a tool of social control, not only reflecting reality but also modelling it through naturalized meanings. From Žižek's (2009) perspective, ideology operates as an "*unconscious fantasy*" that enables society to maintain stability even under structural instability the discourse of economic security becomes a kind of "*ideological glue*" that binds collective meanings and emotional resonance. In this way, economic communication becomes part of political imagination, shaping not only decision-making priorities but also what is considered "*realistic*," "*inevitable*," or "*morally acceptable*."

The dominant position of the threat narrative in discourse suggests that economic security is often perceived through the logic of crisis thinking-economic problems are portrayed as dangers that must be recognized, overcome, or endured. This logic is closely tied to the discursive concept of security, as defined by scholars of the Copenhagen School. As Buzan argues, security is not merely an objective condition but a "*socially constructed process*," in which a threat is named so that it can be "*securitized*," i.e., to justify extraordinary political measures (Buzan, Wæver & de Wilde, 1998). In the discourse of economic security, this logic manifests through metaphors that enhance emotional impact—such as "*inflation front*," "*budget blow*," or "*market storm*," which not only visualize the situation but also create psychological intensity, mobilizing a collective response. For example, in the article "*Business Warnings: An Economic Storm is Approaching - Prepare for Surprises*" (15min, January 25, 2023), the metaphor of a natural disaster is used, creating an impression of an uncontrollable event and encouraging actors to remain vigilant, thus reinforcing a sense of impending crisis. In another case, LRT's article "*Energy Shock: How to Survive the Coming Winter?"* (November 20, 2022) describes inflation and rising energy prices with the "*shock*" metaphor, depicting it as a sudden and destructive phenomenon. These metaphors not only articulate the threat, but also stimulate social-emotional responses such as anxiety, insecurity, and a sense of urgency. Thus, the discourse becomes not only informative but also mobilizing, promoting a specific emotional discipline. According to Buzan et al. (1998), securitization allows a topic to be moved from "*normal politics*" into a "*state of emergency,"* where decisions are seen as necessary, and criticism is potentially deemed irresponsible. In the economic context, this can justify tax reforms, spending cuts, or strict fiscal policies through the threat narrative. The threat discourse functions as a rhetorical structure of security that transforms economic circumstances into a space of social mobilization, promoting collective preparedness, anxiety, or tolerance of uncertainty. As Buzan et al. (1998) note, security in discourse is often constructed as an emotional-political regime where extraordinary decisions are made.

This emotional tension created through discourse serves not only an informational but also a justificatory function, the media-entrenched background of uncertainty legitimizes certain political actions like economic restrictions, fiscal decisions, or state intervention in the market. When economic problems are presented as unexpected, unavoidable, and dangerous, it creates a foundation for the "*there is no alternative*" (TINA) rhetoric, in which proposed measures are treated as rational and necessary. The emotional level of discourse in this case functions as an instrument encouraging society to accept even unpopular decisions. For example, when the Delfi article "*Ministry of Finance: Budget Discipline is Necessary in the Face of Rising Inflation"* (December 2023) states that fiscal constraints are "*inevitable*," it establishes a predisposition that there are no alternatives, and that criticizing such decisions may be seen as irrational or even dangerous. This aligns with the notion of "*emotional securitization*" (Nyman, 2021), where images of threats evoke anxiety, fear, or even moral obligation, preparing the audience for the acceptance of policies. The communication of uncertainty becomes a precondition for the "*justification*" of political actions, as it creates a "*state of misfortune*" in which action is presented as a response to an extreme situation. The media often legitimizes not only the necessity of action but also the morality of the actors i. e. state decisions are portrayed as caring and responsible, while questioning them may be seen as antisocial or irresponsible behaviour. Thus, the media acts as an executor of symbolic power, normalizing specific modes of action and emotional responses. This mechanism is particularly evident in crisis communication, when public space is filled with rhetoric about the need to unite, sacrifice, and "*go through this ordeal together*" not as a choice, but as a moral imperative.

The ideological impact of discourse also manifests in mechanisms of responsibility shifting public media more frequently reinforce the image of state rationality and planning, whereas commercial media emphasize the ideology of individual responsibility, preparedness, and financial self-governance characteristic of the neoliberal state (Brown, 2015; Rose, 1999). This means that different discursive fields shape unequal distributions of responsibility: articles on public broadcaster LRT often emphasize the state's role in stabilizing the economy, for example, in "*The State is Ready to Cushion the Energy Price Shock*" (October 12, 2022), the metaphor of "*cushioning*" suggests an active, strategically thinking state actor. In contrast, Delfi and 15min narratives strongly highlight individual responsibility: for instance, in "*Expert Advice: How to Prepare for Financial Shocks*" (Delfi, November 4, 2023), the emphasis is on building savings, controlling consumption, and "*being ready for any situation*." This frame corresponds with the logic of neoliberal governance, in which citizens are treated as autonomous, calculating subjects responsible for their own financial security (Rose, 1999). Brown refers to this process as "*neoliberal subjectivation*," in which the citizen is re-educated into a quasi-entrepreneurial individual, where security becomes the result of personal investment, and failure. This is an indication of moral deficiency (Brown, 2015). Thus, discourse shapes a moral structure of responsibility, and the state becomes either a caretaker or a manager, and the citizen a disciplined risk manager. This ideological differentiation enables justification for both state intervention and its limitation, depending on the dominant media narrative.

The individual responsibility narrative, especially prominent in commercial media, adopts a moralizing tone: the citizen is framed as someone who "*must prepare*," "*save*," "*manage their risk*." This rhetorical narrative is grounded in normative values such as self-governance, responsibility, competence which serve as moral benchmarks for judging suc-

cess or failure in the face of economic shocks. Such discourse structure individualizes systemic threats and depoliticizes structural insecurity, transforming economic security into a matter of personal adaptability. This reflects the principles of neoliberal governance logic, in which security is treated as individual responsibility, and risk as a natural life aspect that must be learned to manage (Foucault, 2008; Martin, 2007). This logic allows systemic inequalities to be portrayed as the result of "*insufficient preparation*" or "*wrong choices*." For example, in the 15min article "*How to Prepare for the Coming Winter: 5 Tips from Financial Experts*" (October 5, 2023), readers are encouraged to "*draft a strict budget,*" "*cut unnecessary expenses*," and "*plan heating costs in advance*." This rhetorical frame does not problematize inflation, income inequality, or energy dependency as structural issues but redirects attention to the consumer's moral qualities whether they are rational, attentive, and disciplined enough. In this way, the discourse constructs the ideal of a "*responsible subject*," who must "*appropriately*" respond to challenges or else accept blame for failure. According to Isin (2004), such a governance form establishes the notion that those who fail to behave according to required norms are held accountable for their situation. This discursive strategy not only shifts responsibility away from political structures to individuals but also conceals the very conditions of inequality under which decisions are made. Such a discourse structure individualizes systemic threats and depoliticizes structural insecurity by turning economic security into a matter of personal capacity.

At the same time, the discourse strengthens collective identity boundaries, particularly through enemy-identification narratives: "*we*" (the state, society, consumer) versus "*they*" (Russia, China, global corporations, disinformation sources). This allows for discussions not only about economic but also cultural and value-based threats, mobilizing society both informationally and ideologically. As Laclau and Mouffe (1985) argue, discourse shapes social reality through antagonism where collective identities are solidified only in opposition to what is defined as "*the other,*" "*the threat*," or "*a source of disorder*." These antagonistic boundaries are not "*accidental*", they are the condition for forming hegemony, where certain narratives become dominant while others are marginalized. This logic is evident in articles about energy security, where, for example, LRT texts often use formulations like "*disconnecting from Russian resources*" or "*independence from authoritarian regimes*." For instance, the 2023 LRT article "*Lithuania Abandons Russian Gas – A Value-Based Choice*" uses value-laden rhetoric linking energy decisions with political autonomy and moral positioning. This framing portrays energy independence not only as an economic but also as a civic and cultural act, mobilizing a "*us vs. them*" structure, where "*we*" are resilient, conscious, European. Thus, energy dependency becomes a moral-political issue. Similarly, the 15min article "*Is It Worth Buying a Cheap Chinese Inverter?*" (May 10, 2023) associates an economic decision with national security logic, implying that consumer choice has geopolitical consequences. In another 15min article, "*What's Behind Cheap Goods from China?"* (April 12, 2023), Chinese manufacturers are framed as a source of risk not only in terms of quality, but also in terms of geopolitical loyalty. Here, the consumer is encouraged to be both a rational economic agent and a responsible citizen who "*does not support authoritarian regimes*" through their purchases. In the structure of discourse, such narratives define who "*we"* are independent, intelligent, security-minded citizens and "*they*" are untrustworthy, manipulative, foreign subjects. A similar logic applies to the discourse of information security. In the Delfi article "*Front of the Disinformation War Against Lithuania: How Russia Manipulates Our Daily Lives*" (August 17, 2023), sources of disinformation are identified as aggressors, while media users are described as front-line defenders. This metaphorical language further reinforces a sense of collective involvement, where ensuring security becomes the responsibility of the entire society. This is a classic example of the "*discursive struggle for hegemony*" analysed by Laclau and Mouffe (1985), the enemy is identified and symbolically fixed as a source of destabilization against which normative unity is mobilized. This symbolic antagonism reinforces collective identity and legitimizes not only economic but also cultural, political, and security-related decisions. These oppositions in discourse are often not rationally argued but instead rely on affective and symbolic codes: "*threat to values*," "*attack on our way of life*," "*informational invasion."* Such labels enable the stigmatization of "*the other*" and strengthen "our" identity as progressive, democratic, and resilient. In this way, hegemonic discourse creates a field of economic decisions, an emotional-political territory where resistance to alternatives is presented as patriotically and morally unacceptable. From the perspective of hegemony theory, as Laclau and Mouffe (1985) argue, these are not neutral choices, hegemonic discourse defines the entire field of meaning, and through the construction of the "*enemy*," becomes a tool in both state and media power dynamics.

The discourse of economic security in the media does much more than merely provide information, it shapes public imagination, mobilizes emotions, structures moral judgments, and reinforces ideological norms. The analysis reveals that economic insecurity is represented not only through objective indicators, but also through symbolic, metaphorical, and affective imagery that allows the crisis to be articulated as a collective threat. Dominant narratives such as those of threats, enemies, individual responsibility, or state guardianship mobilize action or justify passivity, shape public expectations, and define the boundaries of acceptability. Crisis rhetoric operates as a tool of securitization, enabling the legitimization of "*extraordinary decisions,*" while emotional engagement becomes a basis for moral dichotomies: "*responsible citizen*" versus "*unprepared consumer*," "*our values*" versus "*external threats*." The discourse also constructs collective boundaries, "*us*" versus "*them*", through which both geopolitical (Russia, China), economic (global markets, cheap goods), and

informational (sources of disinformation) threats are recognized. Thus, the media acts not only as a transmitter of information, but also as a constructor of the social world, reinforcing hegemonic systems of meaning through language and imagery. The analysis of the economic security discourse reveals how public communication merges informational, ideological, and emotional components, transforming structural issues into moral questions of decision-making. This discourse both conveys and shapes reality also modelling citizens' reactions, expectations, boundaries of responsibility, and collective identity in the context of security challenges.

The Role of Economic Security Discourse in Shaping Public Perceptions of Security. The discourse of economic security does not merely frame media content or emotional reactions, it also performs a deeper function: shaping a collective perception of security, which becomes the foundation for public behaviour, political expectations, and social trust. This collective sense of security acts as a psychological and cultural filter through which society processes political decisions, evaluates institutional actions, and constructs logics of trust or distrust. For instance, recurring media frames such as "*uncontrolled prices*," "*energy pressure*," or "*inflation shock*" gradually operate not just as information, but as social norms people begin to perceive their everyday realities through these discursive filters, even when the objective situation may not match the level of panic. In this way, a generalized emotional climate is formed, where a sense of insecurity becomes normalized, and social mobilization is driven by fear rather than trust.

In contemporary security studies, collective security perception is not seen as an objective state but as a discursive construct, shaped by social, cultural, and communicative factors. Buzan et al. (1998) argue that "*security happens*" when a certain phenomenon is publicly articulated as an existential threat, and the audience accepts this as a legitimate concern. Security here is understood not as a factual condition but as a process enacted through language and institutional channels. Balzacq (2005) expands this notion by proposing a pragmatic theory of securitization, which emphasizes audience response. According to him, a threat becomes real not when it is named by a political actor, but when it is accepted by society through cultural meanings, emotional resonance, and media channels. Thus, the collective perception of security becomes the outcome of shared imagination, constructed not only by political actors but also by journalists, experts, and cultural institutions. Meanwhile, Wæver (1995) introduces the concept of desecuritization - the process by which issues are returned to the "realm of normal politics." This highlights the dynamic nature of collective security perceptions. They can intensify, diminish, or change depending on communication strategies and public discourse structures.

Critical security studies, particularly in the work of Browning and McDonald (2013), offer a broader conception of security, not just as a reaction to threats, but as the creation of conditions for safe living. Collective security perception here is considered an empathetic, ethically grounded process that should focus not only on protection but also on citizen empowerment. Gordonker and Weiss (1993) add another dimension, analyzing collective security on an international level by emphasizing mechanisms of solidarity, mutual responsibility, and trust. In their view, security depends not only on formal agreements but also on shared understandings of what constitutes a threat and who is responsible for responding.

Recent scholarly literature further enriches this concept with perspectives from emotional securitization and effect theory. Peoples and Vaughan-Williams (2020) stress that emotions are not merely companions to security discourses but are core structural elements through which audiences accept or reject securitizing acts. Similarly, Bratton (2022) analyses post-pandemic security discourses as fields of emotional resonance, where security is articulated through feelings of uncertainty, hope, or guilt. Pantti's (2019) research on media's affective power shows how emotions become central engines of crisis communication narratives.

Discourse analysis as a method allows us to uncover how collective perceptions of security are formed by analyzing the performativity of language. Essentially, how linguistic acts reinforce hegemonic meaning frames, normalize certain emotional responses, and structure social reality through the symbolic field of dominant discourses. Thus, analysis focused on economic security discourse in the media reveals not only the informational content of reports but also the deeper structures that influence social trust, political attitudes, and societal resilience. These theoretical foundations allow us to understand that the perception of collective security is not merely a reaction to actual events, it is culturally and politically constructed through symbolic discourses, media rhetoric, emotional codes, and institutional communication. Discourse both conveys and creates security perceptions through symbolic codes, emotions, and normative evaluations. In doing so, it shapes the collective imagination, rendering security a culturally defined and dynamically changing phenomenon. This makes economic security discourse not only an issue of analytical policy but also an expression of public power.

Discourse impact is especially strong during times of crisis, when the interpretation of information becomes more important than the information itself. At such times, when institutions and politicians seek to secure public support for their decisions (e.g., budget cuts or subsidy allocations), the media becomes not just a channel but an active co-creator of those decisions. In this context, collective security perception does not merely reflect the environment, it also transforms it by motivating or suppressing social action and shaping expectations of what is "*normal*" versus what is a "*crisis*." Ultimately, shaping collective security perception is also a question of power relations. Who has the authority

to define what constitutes a threat, who is granted authorship in public discourse, and which institutions are seen as competent to "*ensure security*." Security perception in this context is not an objective fact but a discursive construct. How people imagine and feel security depends on how it is discussed in the public sphere, which metaphors are used, who is identified as a threat, and who as a protector (Buzan et al., 1998). For instance, when the media announces a budget as a "*wartime decision*" (LRT, December 7, 2023), it not only informs but also frames the situation as extraordinary, demanding unity and trust in the government. Such rhetoric activates the securitization mechanism, where the state becomes a "*provider of protection*," and the public - a "*vulnerable audience*" whose emotional state is regulated through language. Discourse determines which emotions are deemed appropriate (anxiety, hope, responsibility), which decisions are seen as justified (fiscal discipline, subsidies, control), and which criticisms are framed as dangerous or irresponsible. Thus, security perception becomes a product of public communication: it's not that "*the economy is worsening*," but that it is "*threatening*," "*unstable*," or "*requiring response*." These discourse constructions can either strengthen institutional trust or amplify a sense of insecurity, depending on the narrative direction and emotional tone.

Public communication discourses about economic security operate through semantic codes that define not only threats but also norms like what constitutes a "*strong economy*," a "*safe state*," or a "*resilient citizen*." These codes become reference points against which both personal situations and national policies are evaluated. When the media consistently conveys narratives about crises, instability, or external threats, audiences gradually accept these frames as a normalized interpretation of reality. According to Fairclough (2013), discourse functions as a "*form of social practice*" that creates and sustains hegemonic regimes of meaning, with language serving as a tool to normalize understandings of the world.

When the media consistently conveys narratives about crises, instability, or external threats, audiences eventually adopt these frames as standard interpretations of reality. Iyengar (1994) distinguishes between thematic and episodic framing strategies. The former structures a problem as systemic, while the latter frames it as an issue of individual responsibility. Both frames shape how economic security is interpreted: as a collective state task or a personal challenge for the citizen.

At the same time, an emotional level of perception also takes shape through repeated signals of threat, the audience learns to react not only rationally but also emotionally: anxiety, insecurity, and distrust become part of the collective atmosphere. According to Beck (1992), this is typical of the so-called "*risk society*," where the feeling of insecurity does not stem from objective conditions, but from the continuous symbolic uncertainty broadcast through the media, becoming part of everyday life. Here, the media performs a "*risk amplification*" function, it constantly reminds the public of dangers that are often immeasurable but become psychological states.

This is clearly visible in Lithuanian media discourses. For example, in the LRT article "*Energy Shock: How to Survive the Coming Winter?"* (November 20, 2022) not only is a natural disaster metaphor ("*shock*") used, but also survival semantics ("*how to survive*"), which creates an existential atmosphere of insecurity. Such language communicates more than just information about prices; it prepares the public emotionally for stress. As a result, the audience may begin to assess economic realities not by actual changes but by the dominant narratives in the discourse.

Similarly, the Delfi article "*Inflation and Crisis Deepen: Fewer Ways Out*" (February 10, 2023) persistently reinforces the idea of worsening conditions. Phrases like "*no solution*" or "*the government has no plan*" create an atmosphere of helplessness. These semantic structures diminish public trust in institutions. According to Beck (1992), this illustrates how risk becomes not only an economic but also a political crisis of confidence.

The opposite effect can be observed in articles where the media presents the state as prepared. For example, the LRT article "*The State is Ready to Cushion the Energy Price Shock*" (October 12, 2023) employs the metaphor of "*cushioning*", this conveys a sense of control, stability, and management. Such phrasing strengthens the impression of trust even under difficult circumstances. In this case, communication creates not an atmosphere of fear, but one of reliability, where the state appears as an active and capable actor.

Therefore, the emotional aspect of discourse becomes a key factor shaping not only the public's emotional climate but also its assessment of whether institutions are trustworthy. Not coincidentally, risk communication research emphasizes that the most important element is not the objective risk but how it is conveyed (Breakwell, 2000; Nyman, 2021). Thus, the media becomes not only a transmitter of information, but also a tool of emotional engineering, constructing collective states from anxiety to trust, from helplessness to mobilization.

The discourse of economic security also helps to standardize public imagination about security. Although individuals experience different risks, job loss for some, inflation or instability of the pension system for others, the public sphere presents these phenomena through shared symbolic narratives that create a collective horizon of problem interpretation. Discourse becomes both a channel of communication and a structural mechanism that organizes how society perceives reality. According to Fairclough (1995), discourse reflects the world and actively shapes it, producing "*dominant regimes of meaning*" through which people understand their situation. The construction of collective reality occurs through

recurring semantic forms. For example, phrases like "*living from pay cheque to pay cheque*," "*the working poor*," or "*we must prepare for a hard winter*" frequently appear in various Lithuanian media publications. In the Delfi.lt article "*The Story of an Unemployed Man: Everything Collapsed in a Month*" (October 15, 2023) an individual experience is linked to a broader narrative about the state's inability to protect its citizens, thereby creating a sense of collective insecurity. Wodak and Meyer (2009) point out that discourse "*encompasses structures of knowledge and power that allow certain narratives to dominate while others are marginalized*." Thus, the dominant frames of economic insecurity in public communication such as crises, uncontrolled inflation, or opaque government policies become inseparable from the collective imagination. Such imagination, according to Žižek (2008), is not a conscious reflection but a "*phantasmatic structure*" that helps people make sense of complex phenomena. For instance, the LRT article "*Inflation Weighs Not Only on Wallets but also on Mental Health*" (December 2, 2022) analyses how rising prices affect not only purchasing power, but also the psychological resilience of society. This analysis is based on the idea that economic security is conveyed not as a set of numbers, but as an emotional-social phenomenon. This allows different experiences like individual stress, job loss, business failure to be unified and transformed into a "*shared condition*" that must be addressed collectively by the state or society. Thus, the understanding of security becomes a culturally defined, discourse-structured phenomenon sustained through public communication.

The discourse of economic security in the public sphere functions both as an informational system and as a powerful tool for shaping social imagination. The discourse establishes collective narratives in which economic threats are not only identified but also given meaning through metaphors, emotional codes, and semantic structures. Through these discursive filters, the audience interprets current events, constructs its sense of security, levels of trust, and expectations toward the state. As evidenced by both theoretical sources (Fairclough, Buzan, Balzacq, Beck) and empirical examples from Lithuanian media, security in public communication is not an objective or static category, it is a dynamic and culturally mediated process. This discourse can strengthen trust in institutions and mobilize citizens or, conversely, foster distrust, apathy, and fear. In this way, the discourse shapes not only what society knows about the economy, but also what it feels, expects, and legitimizes. This makes it a key element of security culture in contemporary public communication.

Conclusions

The concept of economic security in scholarly literature is regarded as complex and multidimensional, encompassing not only economic but also social, political, and informational aspects. Different theoretical approaches allow for the phenomenon of economic security to be analysed from various perspectives and form the basis for defining it as a condition in which the state and society retain the capacity to respond to economic threats, preserve essential functions, and ensure their development in the long run. Assessing economic security involves various criteria, starting with classic macroeconomic indicators such as GDP, inflation, unemployment, or national debt and extending to more complex indexes incorporating social, energy, and institutional factors. Recently, increasing attention has been paid to subjective perceptions of security based on public trust in institutions, social resilience, the stability of the information space, and access to vital resources. In national policy, economic security has become a strategic priority closely linked to other dimensions of security such as military, energy, information, and social. In Lithuania's case, it is clearly identified in key political documents and associated with ensuring state independence, internal stability, and long-term development.

The developed theoretical foundation of media power, combining Michel Foucault's concept of power/knowledge, Norman Fairclough's Critical Discourse Analysis (CDA), and the approaches of other discourse theorists as Laclau & Mouffe, Van Dijk, Wodak, and Jäger has revealed that the media is not a neutral channel of information transmission. Rather, the media functions as a structure of ideological production that articulates and reinforces hegemonic discourses on economic security. These discourses not only represent economic threats but also create normative judgments, shape a collective emotional field, and legitimize certain political decisions as rational or inevitable. The methodology of empirical analysis was based on a multi-layered discourse analysis model i.e., CDA, the discourse-historical approach (DHA), and Van Dijk's cognitive perspective, which enabled the study of how public and commercial media structure narratives of economic security. Different types of media play varying ideological roles: public media tends to support pluralism and reflexivity, while commercial media promotes polarization and a consumer-based perception of risk. In this way, the methodological model addresses the theoretical objective, providing a foundation for empirically identifying how perceptions of economic security are constructed through discourse.

An analysis of economic security narratives in Lithuanian media (LRT, Delfi, 15min) from 2020–2024 revealed five dominant narratives: threat, stability, individual responsibility, enemy identification, and sustainability. Quantitative analysis (112 articles) showed that the threat narrative constituted the largest share (38.4%), significantly dominating the others. The empirical data suggest that:

- Thematically, the discourse is dominated by topics of uncertainty, economic shocks, external threats, and internal vulnerabilities, especially in the context of energy, inflation, and geopolitical tensions.
- Emotionally, the discourse is infused with feelings of insecurity, anxiety, responsibility, and mobilization.
- Semantically, consistent oppositions were identified ("*crisis/stability*," "*us/them*," "*responsibility/dependency*"), which help articulate ideological conflicts and identities.
- Visually and rhetorically, narratives are constructed through metaphors (e.g., "*economic storm*," "*inflation front*," "*crisis blow*"), which facilitate political mobilization and serve as cognitive schemas for the media audience.

Public media (e.g., LRT) tends to articulate narratives of stability and state responsibility, while commercial media (Delfi, 15min) more frequently constructs a discourse of individual responsibility based on neoliberal ideology. The enemy identification narrative intensified especially after 2022, combining information threats, military metaphors, and images of civilizational clashes. This analysis demonstrates that media discourse on economic security is not neutral - it operates as an ideological mechanism shaping citizens' perceptions of security, responsibility, and threat. In this way, the media becomes an active shaper of economic and political imagination, and narratives become tools for structuring not only information but also emotional and social realities.

The discourse of economic security in the media functions as a powerful tool for structuring public communication, informing the public about economic developments and shaping the collective perception of societal security. This discourse operates through metaphors, frames, and emotional codes that reinforce not only cognitive, but also affective reactions to economic phenomena. Framing strategies such as threat narratives, individual responsibility, or state guardianship frames determine how society perceives risk, evaluates institutional decisions, and chooses behavioural strategies. Economic security in public communication is both an objective condition and a discursively constructed phenomenon that transforms structural problems into moral, ideological, and emotional judgments. Thus, discourse becomes a tool for shaping behavioural norms and collective identity, exerting a long-term influence on decision-making in democratic societies and security policy.

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2.4. HUMAN RESOURCE MANAGEMENT STRATEGY

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Abstract. *In modern organizations, environmental changes require various reactions from organizational employees trying to achieve their strategic goals. A sceptical attitude of employees towards strategic change management can destroy effective strategic plans, and only a clear strategic change process can reduce resistance by developing human resource management strategies that focus on solving current problems. Therefore, this chapter presents the concept of human resource management strategy, debatable aspects of its connection with strategic management, the significance of human resource management policy, and the necessity and possibilities of its development and implementation. The purpose of the chapter: to reveal the concept of human resource management strategy and debatable issues in the development and implementation of human resource management policy, presenting the assumptions for the implementation of human resource management strategic decisions in the organization, taking into account their impact on society and the environment.*

Keywords: *human resource management strategy, human resource management policy, strategic decisions.*

Introduction

Strategic human resource management involves integrating human resource strategies with business strategies, ensuring that human resource management contributes positively to the achievement of business objectives. This integration requires a deep understanding of the business, its market dynamics, and the competitive environment. The role of human resources in this context is not only to provide support services, but also to design and implement practices of human resources that foster talent development, increase employee engagement, and create a culture that aligns with business goals.

The concept of human resource management belongs to the field of strategic management and occupies a clearly defined integrated position in business management. It is important to understand that this makes the role of managers unclear. On the one hand, the human resources manager acts as a strategic partner in the management of the company, and on the other hand, they must fight for the company's employees. It is these managers who are considered by employees as channels of communication with the company's authorities (Ulrich, 2014; Armstrong, 2014, 2023; Bakanauskienė, 2015).

As the rapid development of the economic, political, social, and technological environment increases the complexity and uncertainty of activities in both the public and private sectors, it raises new requirements for human resource management. Any organization is a social entity where people play a key role in determining and implementing the organization's strategic development direction. The success of the organization will depend on whether it can gather competent and innovative employees and retain them. In recent years, organizations have faced challenges such as:

- an aging population requiring organizations to pay more attention to employees' physical and mental health to ensure a longer working age and employee productivity; an extending working age leading to different career expectations, working habits, life goals, and attitudes.
- the globalization of the labour market, which implies the appreciation of cultural diversity by considering the expectations and needs of individual groups of workers, conditioned by cultural peculiarities;
- technological innovations that affect employment relationships and organizational culture emphasize aspects related to ethics and data protection, using artificial intelligence and other technologies with potential for intervention.

Human resources occupy an important place in strategic management, where a company creates value. In addition, it is important to determine exactly which positions or people in the company contribute the most to creating value. Finally, it is crucial to gain priority in consulting and implementing the organization's strategy. This can only be achieved when everyone, including staff of human resources, understands the expectations of the company's customers. Ulrich (2014) states that it is the human resources department that can help optimize human capital through workforce planning and analysis. In order to optimize human capital, it is first necessary to define the technical and social skills of employees for the future of the company. The next step is to create a motivating employee value proposition and give employees a sense of purpose and usefulness.

Strategic human resource management can be defined as a development process within an organization that promotes proactive planning of both current human resources and future changes in them. Strategic human resource management can also be simply defined as a proactive approach to providing the right human skills for the right positions, for the right duration, and at the right cost to ensure the successful achievement of corporate goals (Bakanauskiene, 2008; 2015).

Every organization is different in its structure and dynamics. For this reason, strategic human resource management should be developed differently in each company. Strategic human resource management is organized so that the organization can avoid unforeseen events related to changes in human resource needs in the future. This depends on how human resource management policy is perceived, and what principles are used in its development and implementation. Therefore, this chapter focuses on the understanding of human resource management strategy, its integration with the organization's strategic goals, factors influencing the implementation of this strategy, and human resource management policies.

The Concept of Human Resource Management Strategy and its Relationship to the Strategic Goals of the Organization

Strategic human resource management is the process that organizations use to manage their employees. As a way to ensure that an organization's human resources are used in a way that helps achieve the organization's goals, it acts as a bridge connecting human resources and company goals. Through human resource management strategies, companies can more effectively manage employee performance and development, as well as create programmes and policies that support the company's overall strategy.

The goal of strategic human resource management is to create policies and programmes that align with the company's business strategy. The main difference between human resources and strategic human resources is that human resources focus on the day-to-day management of employees, while strategic human resources focuses on how employees can achieve the overall goals of the company. This means that strategic human resource management must first understand the company's business goals and then develop programmes and policies that support those goals. Examples of such strategic human resource management programmes and policies may include: *performance management (developing systems to monitor and improve employee performance); training and development (identifying employee development needs and providing training and resources that help them develop); compensation and benefits (developing compensation and benefits programmes that attract and retain employees); employee relations (managing employee relations to create a positive work environment).* These are just a few examples of the types of programmes and policies that can be part of human resource management strategies. Depending on the organization's goals and employee needs, specific programmes and policies may vary.

Strategic human resource management is important because it helps companies achieve their goals. By aligning human resource programmes and policies with a company's business strategy, strategic human resource management can help companies improve employee performance, develop employees, and create a positive work environment. It can also help companies save money by reducing employee turnover and increasing productivity. Human resource management strategies can: *improve employee performance (this can help companies improve employee performance by creating systems to monitor and improve performance); develop employees (this can help companies develop employees by identifying employee development needs and providing training and resources to help them improve); reduce employee turnover (this can help companies create a positive work environment by managing employee relations); increase productivity (this can help companies improve employee performance and create a positive work environment).* Thus, human resources are considered the main strategic asset, providing unique capabilities that enhance competitive advantage. This perspective encourages organizations to invest in their workforce through training, development, and robust human resource practices that increase productivity and innovation.

The Concept of Human Resource Management Strategy

Traditionally, human resource management strategy is understood as a functional-level strategy, the same as marketing, finance, etc. All of these strategies define intentions and plans that are relevant and important to the entire organization. Human resource strategy includes specific aspects: staffing, training, compensation, etc. (Armstrong, 2016). It unifies and integrates all human resources activities aimed at achieving the organization's strategic goals and also influences the formulation and conversion of human resources philosophy into policy and specific programmes. The main goal of the human resources strategy is to support the overall strategy of the organization, to integrate it, and to form a coherent whole with it and other functional strategies.

It is more appropriate to use the synonymous term human resource strategy, as it more clearly reveals the purpose: to provide the organization with human resources that meet its overall strategy in the future - in the required quantity and composition (not only by jobs/responsibilities, but also by competence and personal qualities) (Price, 2007; Girdauskiene, 2022).

The broader concept of human resources strategy sets the task of ensuring the organization's strategy through appropriate employee behaviour. This would mean analyzing what employee behaviour would be required to follow the organization's strategy, and how to implement a personnel policy that would encourage and guarantee positive behaviour. An example of an organization's strategy and requirements for employee behaviour is presented in Table 1, "The relationship between organization's strategy and requirements for employee behaviour." It shows the demands placed on employee behaviour by, for example, Porter's strategies (Torrington, 2008; Armstrong, 2016).

Other approaches to human resource management strategies include not only changes in employee behaviour, but also go further: changing the organizational culture, employee beliefs, and values. In this case, models are created that attempt to define the relationship between organizational culture, organizational climate, and employee values with the organization's human resource management and the effectiveness of the organization's operations.

Table 1. The Relationship between Organization's Strategy and Requirements for Employee Behaviour

Strategy type	Requirements for employee behaviour
1. Innovation	Great creativity Long-term orientation Relatively high degree of cooperation Aiming for average quality Aiming for average quantity Equal focus on processes and results Higher degree of risk level Tolerance for ambiguity and unpredictability
2. Quality improvement	Relatively repetitive and predictable behaviour Prevailing long-term or medium orientation Low cooperativity, interdependence Great attention to quality Moderate focus on the quantity of results Strong focus on processes Low risk activities Commitment to organizational goals
3. Cost reduction	Relatively repetitive and predictable behaviour Most common short-term orientation Preference for autonomous or individual activity Moderate approach to quality The prevailing aiming for product quantity The prevailing aiming for results Low risk activities Relatively strong correlation between comfort and stability

Adapted from: Torrington D. (2013); Armstrong, M. (2016)

Summarizing the opinions presented in the human resource management literature, the following traditional and new areas of human resource strategy can be distinguished: providing the necessary human resources; anticipating employee transfers or layoffs; developing new skills needed for new products or equipment; organizational culture and formation of employees' cultural values necessary to achieve business goals; reward management; continuous employee development; talent management; knowledge management; employee relations; loyalty and employee engagement; employee well-being management; organizational resilience; work-life balance; sustainability and ethical human resource management.

The main approaches to defining the concept of human resource management strategy are: a plan for achieving strategic goals; a set of actions carried out by the organization's managers who make decisions related to employees; a set of rules and principles for working with people (Korsakienė, 2011).

Thus, a human resource management strategy is a comprehensive plan that helps ensure the implementation of organization's mission and strategic goals based on human resource utilization strategy. Developed and adjusted by the company's board and human resources manager, it is related to the organization's strategy and can be described as the overall direction of working with people to ensure the long-term functioning of the organization.

When explaining the concept of human resource management strategy, its purpose in the organization, and the tasks it poses, it is necessary to examine in more detail the possible relationship between human resource management and organizational strategy.

The Relationship between Human Resource Management Strategy and Organizational Strategy

The degree of integration between organizational strategy and human resource management strategy varies across organizations. The most common view (Armstrong, 2016) is that human resources strategy must be vertically integrated into business strategy. Even better, it should be an integral part of the business strategy, integrated into the business planning process when necessary. Vertical integration is needed to ensure alignment between business and human resources strategies so that the latter helps implement and, of course, formulate the former.

A comprehensive list of possible relationship options, distinguishing five degrees of integration between organizational strategy and human resource management strategy, is presented in Figure 1 (Armstrong, 2023). Several models can be distinguished:

- *Option A – separation model.* There are human resource management and organizational strategies in the organization, but there is no connection between these strategies. They are formulated and implemented separately.
- *Option B – compliance model.* The human resource management strategy must meet the requirements of the organizational strategy. This model shows organizations in which operational goals are formulated by top-level managers, and then they are "driven down" through functions, departments, etc. Thus, the human resource management function, along with other functions, depending on the organizational strategy, must adopt and implement a strategy that meets the needs of the organization.
- *Option C – dialogue model.* The formulation of organizational and human resource strategies recognizes the need for two-way communication and discussion. This means that not always what is planned in the organization's strategy can be implemented, so additional alternatives provided by human resource management need to be considered.
- *Option D – holistic model.* An organization's employees are recognized as the basis of competitive advantage, not just a means to implement the chosen organizational strategy. Therefore, organizational and human resource management strategies are formulated together.
- *Option E – a human resources-based model.* The human resource management strategy is put at the top of the list. The argument is as follows: if employees are considered the most important competitive advantage, then their strengths need to be built upon. Here, human resources are understood not as a means of implementing strategy, but as a key force in developing organizational strategy.

In other cases, the relationship between organizational and human resource management strategies is defined through proactive and reactive behaviour or by examining the relationships between the environment, human resource management, and operational strategies (Armstrong, 2023).

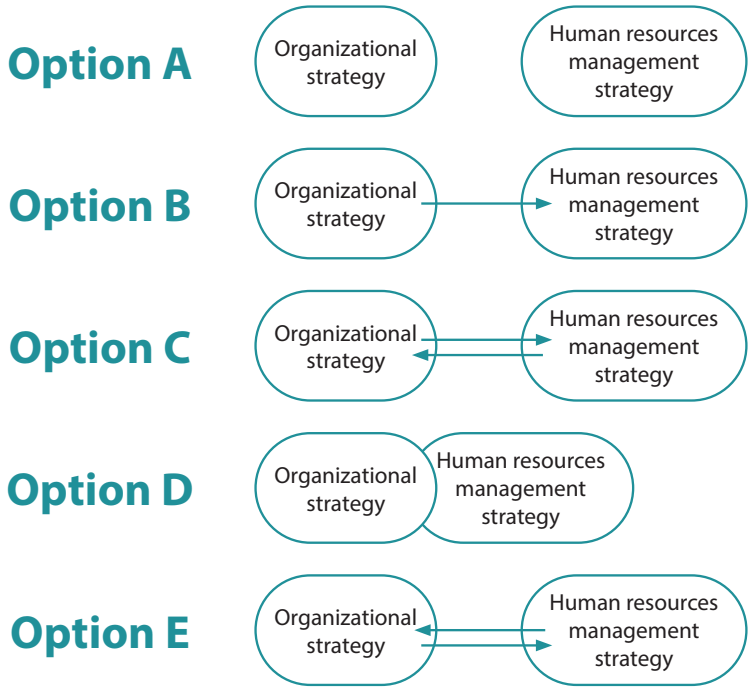


Figure 1. Possible Connections between Organizational and Human Resource Management Strategies

Torrington D. (2013); Armstrong, M., Taylor, S. (2023)

By acting proactively, human resource management professionals help formulate organizational strategies, thus, there is a two-way relationship between human resources and organizational strategies. The opposite is reactive behaviour, where the human resource management function is understood as supporting the organization's strategy. If the organization's strategy is formulated without the participation of human resource management specialists, then there is a strictly one-way relationship: human resource management policies and practices implement the organization's strategy. In such a case, four levels are distinguished, assessing the strategic aspect of the human resource management function, where organizations are 1) operationally reactive, 2) operationally proactive, 3) strategically reactive and, rarely, 4) strategically proactive.

Strategic Role of Human Resource Management

The presented options for the relationship between human resource management strategy and organizational strategy show that they determine the role, development, and objectives of human resource activities in the organization. The place and role of human resources specialists or services in the organization also depend on them. Factors that influence the role of human resource management in an organization's strategy can be distinguished:

The position of the head of the human resources department in the organization. It is stated that the relationship of human resource management to strategy depends on the position of the human resources manager in the organization. Their membership on the board often helps with integration into the organization's strategy, as top-level managers perceive human resource management as an integrated part of the organizational strategy.

Organizational culture and employee engagement. These are inseparable components of strategic human resource management that have a significant impact on the organization's ability to achieve its strategic goals. These elements not only define the work environment but also directly affect employee productivity, retention, and the overall functioning of the organization. Employee engagement reflects the level of an employee's commitment and connection to the organization. Engaged employees are more productive, show greater loyalty, and are more likely to contribute to positive business outcomes. Organizations characterized by high engagement benefit from lower employee turnover, higher customer satisfaction, and better financial results. Therefore, strategic human resource management focuses primarily on engagement as a key area by implementing policies and practices aimed at increasing job satisfaction and motivating employees. Organizational culture refers to the collective values, beliefs, and principles of an organization's members. It acts as a powerful force shaping employees' perceptions, behaviours, and understanding of the organization's goals. A positive and strong culture increases employee morale and productivity and closely aligns with strategic objectives. It is important how the organization values employees, how they are understood: as an expense or as an investment. Thus, human resource policy is influenced by the prevailing corporate philosophy, which reveals the aspirations of the company's management, and by the company's culture. If employees are not included in the process of developing common goals and operational strategies, contradictions emerge, since the company's philosophy and human resources policy express aspirations that are unacceptable to the company's culture.

Talent management as a strategic function in the organization. Talent management is an important part of human resource management strategy, encompassing various processes aimed at attracting, developing, retaining, and utilizing employees in a way that maximizes the value of human resources. This approach is focused on aligning talent management strategies with the organization's goals to ensure that the workforce not only meets current operational needs but also fosters future growth and innovation.

Sustainable human resource management. This approach is related to issues such as: ensuring the supply of qualified and motivated human resources in the future through human resource development, creating reward systems, and integrating sustainability into the organization's goals; the organizations themselves, employees, and society are responsible for sustainable activities; it should be noted that responsibility extends to employees' personal accountability for themselves and their careers; ensuring the prevention of negative impacts on human resource management through voluntarily expressed socially responsible employee behaviour and their participation in decision-making (Stankevičiūtė, 2018). Sustainable human resource management practices contribute to these positive internal and external outcomes: collaboration-based human resource development; establishing an organizational structure that facilitates employee participation and direct communication with employees; evaluating work roles and activities, promoting employee strengths and more favourable outcomes; leadership development, employee engagement, talent and change management, value creation and consolidation, employee health and safety, sustainable competitive advantage.

Organization's environment. A volatile, complex and dynamic environment forces the inclusion of human resource management in the organization's strategy. If an organization operates in a stable environment, there is no need for a change, a new way of thinking and acting.

In the special literature on the topic of strategic management (Černiauskienė, 2013), cognitive-based theories are distinguished, which are based on the assumption that the development of people's commitment to the strategy plays an important role in the organization, and it is proposed to involve employees in the strategic decision-making process and give

them more authority. These theories also emphasize the importance of developing employee competencies. The activities of human resources departments are also expanded, as they become responsible for employee participation in this process.

The scientific literature also highlights human resource analysis and its importance. Human resources are identified as one of the success factors of strategic changes. Human resource analysis is understood as the initial step of strategic analysis. Strategic analysis distinguishes three components of organization's resource potential: human, financial, and operational resources. The goal of strategic resource analysis is not only to describe the structure and composition of organization's resource potential, but also to clarify and understand the role of resource potential and its components in ensuring the organization's successful strategy implementation (Bakanauskiene, 2008; 2015).

Human resource analysis (also known as an organizational human resource audit) is important before starting to develop a strategy and cannot be carried out after the strategy has been approved. First, the composition of human resources, professional qualifications, competence and mutual relationships are assessed; then the general culture of the organization (to highlight the style and methods that dominate the organization's human relations); the ability to manage strategic changes (which will manifest themselves in the implementation of a new strategy); and the organization's politics (because it affects the process of developing and implementing the strategy).

There are two main objectives for a human resources audit. The first is to gather information about the organization's employees and policies. These would be: the number of employees and turnover in the organization; the distribution of employees in the organizational structure; organizational structures controlling employee activities; the use of special purpose teams in the organization; the educational and professional qualifications of the organization's employees and methods of promoting them; interpersonal relations between employees and relations with the organization's leaders and managers at various levels; employee selection, adaptation and competence development in the organization; principles and methods of controlling and promoting work quality and efficiency; investments in the organization's human resources. The second objective is to assess the role and contribution of human resources strategy in developing and implementing the overall strategy of the organization: the relationship with the overall strategy of the organization; the characteristics of human resources strategy; the adaptation of human resources strategy to changes in the organization's overall strategy and the external environment; the influence of human resources strategy on the organization's most important strategic changes; control of human resources strategy.

Human Resource Management Policy

Concept of Human Resource Management Policy

Human resource management policy can be understood as the declared stable and unchanging provisions, values, and frameworks on the basis of which the organization's strategy is implemented and procedures are defined. It is like a kind of organizational code that guides employees' actions, common guidelines, ensures the constancy of goals, and prevents decisions that are not in line with the objectives. Human resources policy is an integral part of the organization's policy. At the same time, it is a tool for implementing human resources strategy. Human resource management policy can be defined as a part of the organization's policy that includes the main goals, purpose, norms of behaviour towards employees, and the organization's obligations to its employees. The requirements for human resource activities, their implementation and development depend on the human resource management policy. Human resource management policy, in turn, depends on the organization's philosophy and organizational culture, and it embodies the aspirations of the organization's management.

Thus, human resource management policy primarily reflects the subjective attitude of the organization's managers towards employees, and the importance they place on them. This can be explained through the general concept of politics as a group of individuals existing in an organization who implement certain of their interests through strategic changes. It is becoming clear that the views of individuals and their groups shape organizational policy, and that organizational leaders have the greatest opportunity to do this.

The human resource management policy explains strategic human resource management decisions to the organization's employees and ensures their consistent implementation. Properly chosen, it helps retain desired employees, attract new ones, improves relations between the employer and employees, and suppresses conflicts within the team.

Types of Human Resource Management Policies

Passive policy. The organization's leaders do not have a clear action plan for planning, training, or evaluating human resources, and efforts are made to eliminate the negative consequences of employee selection or behaviour. Such an organization cannot forecast human resource needs and does not have selection and assessment methods. It only reacts to emerging conflict situations and tries to eliminate them.

Reactive policy. It is carried out to control negative phenomena in human resource management. In this case, problems of stable work efficiency are solved without a clear concept of employee motivation. Therefore, we only have to eliminate crises by rapidly taking measures to promote human resources. In such organizations, human resources departments have crisis diagnosis and appropriate emergency assistance tools only for the near future.

Preventive policy. The organization's management has made verified predictions of critical situations but does not have the means to influence them. In such organizations, human resources departments not only use human resources diagnostic tools but are also able to predict the situation in the near future, the need for employees and the necessity of training. The problem is the inability to create targeted human resource management policy programmes.

Active policy is implemented when management has the tools and methods to develop human resources policy. In such organizations, human resources departments must develop anti-crisis programmes and conduct constant monitoring of the human resources situation. Then it can be recognized that the organization has an active human resources management policy. There are two types of active human resource policies:

- rational policy – allows management to have both a qualitative and a calculated forecast of the development of the situation. In such organizations, human resources departments can act on the situation both in the distant and near future, developing programmes that allow them to adjust work with employees according to changes in the situation.
- adventurous policy does not rely on qualitative predictions based on analysis of the situation but seeks and tries to influence it. In such organizations, human resources departments usually do not have the means to predict or act on the human resources assessment situation.

Open policy. It is characterized by openness and transparency at all levels for both existing and potential human resources. You can come to such an organization and start working even without the appropriate qualifications or experience, because it has a clear tendency to hire people because it does not have established human resources concepts and implements an aggressive policy of conquering markets.

Closed policy focuses on selecting and hiring human resources to work only for a specific job, with substitution or replacement functions performed only by individuals who have worked in the organization for a longer period of time. Such a policy is typical for organizations that have a specific corporate culture and atmosphere or are focused on it, when creating human resource loyalty development programmes or working in conditions of human resource shortage.

Another factor that determines the existence of even a human resource management policy is the size of the organization. In organizations with human resources departments/services, a more general human resources policy is developed, covering hiring, training, etc., a standard employee compensation and safety system. For smaller organizations, where there are no human resource management specialists, these things are not as relevant. One organization's human resource management policy differs from another, primarily because organizations have different hiring policies.

Hiring Policy

Recruitment policy is a fundamental component of human resource management strategy, playing a crucial role in aligning human resource capabilities with the organization's strategic objectives. This process involves thorough forecasting of human resource needs, developing talent management strategies, and ensuring that human resource policy and practice effectively support the broader organizational goals. This process primarily depends on the recruitment policy. If an organization has been successful in recruiting and selecting employees in the past, many managers believe that one of the best ways to find an employee is through people already working in the organization. The advantage is a lower probability of making the wrong decision. It is determined by the clear and sufficiently well-known positive and negative characteristics of people already working, more accurate data and a larger amount of it than about candidates from outside. In addition, such organizational policies and awareness motivate employees to strive to perform better. By moving one of the existing employees to a higher or different position, the organization would benefit from its investment in employee training. Disadvantages of recruiting within an organization include excessive competition for promotion, resulting in internal tension and a negative atmosphere, preventing new ideas or the application of new working methods.

If the decision is made to use external recruitment sources for the search, the company has a much larger selection of candidates, and in some cases, it is much cheaper to hire an employee who already has certain skills than to train those working in the organization, especially when a good employee is needed today. Another advantage is that new employees may bring a completely new perspective or new ideas when they join the company. Disadvantages of using external recruitment sources: recruiting candidates is more complicated, new employee adaptation is necessary, i.e., additional time is needed for employees to adapt to the new environment - to get acquainted with people, procedures, and all organizational policies.

There is still debate about who is better to hire: young people or mature people, experienced or employees of different generations. Replacing or re-forming an entire team of employees is only possible when creating a new small company. In a large company, such aspirations fail because they encounter various difficulties. Selecting employees solely based on age is highly questionable. Better may not be younger, but older, and vice versa. A mature, experienced, well-connected, and proactive employee who is willing to learn may be more valuable than a young, inexperienced employee. Every transformation in human resource management can lead to resistance from employees who perceive risks to themselves. The impact of the economic situation is very controversial. The better the company's economic situation, the greater the opportunities to motivate employees by providing them with better working and social conditions. A high-performing company can do much better at building the right human resources team by using the right motivation methods.

The organization's human resources management policy also provides for general principles of career planning, remuneration for work, employee safety, and development of their competence. This means that all employees of the organization are subject to the same career planning criteria, equal remuneration for work, and employee safety methods. However, people differ in their nature. They pursue different goals, they are motivated, inspired, and encouraged by completely different things. When an organization tends to have fewer, but versatile, employees with diverse work experience, who are able to think globally and implement various tasks, then in order to utilize the true potential of these people, it is necessary to create a more individualized human resources management system that allows for individual assessment and promotion of employees. The tasks of implementing such a system are usually based on the direct work, communication, and attitude of the manager and employee.

Human Resource Development Policy

Each organization, taking into account environmental conditions and its internal actions, creates an individual human resource development strategy. In this case, the organization may have the following human resource management policy: provide only the competence necessary for the work/responsibilities performed by the employee, and update it; provide the employee with the competence necessary for the work/responsibilities expected to be performed in the future, and update it; provide employees with training benefits. In addition, policies can be formulated regarding the teaching methods to be used, etc. J. Bengtsson (2017) distinguishes human resource training (learning) strategies that describe in detail the provisions of this activity.

1. Intensive strategy. Following this, the organization mobilizes employees with appropriate education, takes care of their intensive training and development of competencies in the workplace, which are also constantly changed in order to better utilize the qualification and competency opportunities provided by the workplace. A prerequisite is a well-developed basic training system and a labour market that provides organizations with the necessary number of employees with the necessary qualifications and competencies.

2. Dual, or polarization, strategy. In this case, the potential of the workforce must be increased by better utilizing the talents and aspirations of employees. Priority is given to employee responsibility for the growth of their own competence. This strategy is very attractive, but quite risky, as it creates a significant group of people who may be laid off because they are unable to improve their qualifications. Therefore, there is a possibility of abuse. This strategy is recommended for organizations where there is a perceived lack of coordination between basic (general education and vocational training) training and the professional qualifications needed by economic entities. The problems of the majority of employees' unpreparedness to work in market conditions should be solved by motivating and encouraging employees to improve their qualifications. This strategy creates opportunities for employees to develop and does not require large financial resources.

3. Mobility strategy. It allows the organization to highlight the importance of higher (university) education, regardless of how many such people are actually needed. Much attention is given to learning within the organization itself. This approach ensures a very high mobility of available human resources when new needs arise, since employees with higher education have greater opportunities to retrain and adapt to new work requirements. Such a strategy is proposed in high-tech organizations, where the development of technological progress is a key feature that promotes rapid changes in qualification requirements. Organizations that apply this strategy create appropriate conditions for their future development. Technologies have fundamentally changed the operational processes of organizations, providing previously unimaginable efficiency and opportunities for growth. From the emergence of simple systems to the use of artificial intelligence and digital learning, technologies have transformed talent management, development, and other aspects of human resource management.

The success of human resources, integrating into a multicultural labour market with different education and training systems and diverse traditions in the field of human resource management, primarily depends on the strategic competencies of the individual, which shape a unified approach to human resource management, encompassing the resolution of strategic tasks, achievement of results, quality assurance, and so on. It is associated with an effective employee selection

and career system, transparency in institutional operations, enhancing the quality of employee performance, and the implementation of human resource management elements within the organization.

In scientific literature, these research directions are often limited to the issues of developing employee competencies in the context of organizational needs, leaving the development needs of individual competencies as a secondary role (Adamonienė, 2020; 2022). Attention is directed to the individual who is developing strategic competencies that enable successful integration into future work activities. Therefore, organizations consider not only the needs of the organization but also the needs of the individual. The development of an individual's strategic competencies is not so much a matter of a regulated system as it is a matter of perspective. Successful development of an individual's strategic competencies is based on fundamental principles that harmoniously align the individual's understanding of their need for personal competency development, strong internal motivation to self-improve, and readiness to change.

Development and Implementation of Human Resource Management Policy

Human resource management policies in organizations are primarily developed to help achieve the most important strategic human resource management goals. A policy is truly beneficial to an organization when it is appropriate, well-designed, and easy to implement. Furthermore, as a management tool, it must be constantly updated and supported. Therefore, when developing a human resource management policy, it is important to answer several questions.

Who should develop human resource management policies? Two factors are decisive: the size of the organization and the leadership style. A small, growing company may not have a policy in place until there is a need. As a company grows, there is a need to have a formal policy, as it helps ensure consistency and fairness for all employees. Leadership style usually determines who develops the policy. In companies where management is decentralized, policy development is usually delegated. The board of directors develops policies for top-level managers, who then develop accordingly for their subordinates. As structures have flattened in recent years, employees have been increasingly involved in the policy-making process. Sometimes ideas are collected from all employees, sometimes policy development is delegated to a team of employees.

How should a human resource management policy be developed? One of the most important requirements is that the policy must be clear to everyone who uses it. Consequently, all policy statements must be clear, concise, and highly precise. The editors must use words that the reader will understand (sometimes it is even suggested to provide a glossary of terms as an appendix in the text). Statements of claim must set forth reasonable and beneficial practices for matters such as hiring, firing, compensation, and benefits. The policy must include provisions on discrimination issues.

What technological tools help create and disseminate human resource management policies? The intranet can easily collect suggestions for policy development, disseminate information for evaluation and comments. Many companies now publish their policies on the intranet so that the provisions are accessible conveniently and promptly.

Use of human resources policy. An important point is the periodic review and adjustment of the policy. The need for adjustment is determined by constant requests for clarification of a provision, statement; complaints, dissatisfaction with a provision; changes in the external and internal environment: changes in work, social issues, business decisions, technological changes, changes in laws, changes in health and safety management, moral and ethical norms.

Principles of developing and implementing human resources policy. The following principles of policy development should be distinguished: the philosophy, culture and human resources policy of the organization must be harmonized; human resources policy should not provide solutions to specific tasks, but only establish principles for solutions and formulate rules of conduct; human resources policy emphasizes the following factors: ensuring safe work and social conditions, harmony between different groups of employees (managers, specialists, workers); harmonizing the interests of owners and human resources; optimizing the potential of human resources by emphasizing the interests of employees; ensuring the productivity and efficiency of human resources activities.

The following phases of human resource management policy development and implementation and recommendations for their implementation can be distinguished:

- *Human resource management policy development phase.* It is recommended to: 1) involve employees – all employees must participate; 2) clarify the task – participants need to be explained what is wanted to be achieved in any area of human resource management; 3) assess the current situation – explain what principles are currently followed, what is being done, identify what is not suitable; 4) formulate and discuss theses – the desired principles and the current situation must be combined, and training methods are planned; 5) ensure that the policy provisions are adopted – it is necessary to overcome employee resistance, carry out explanatory work, and discuss in groups; 6) ensure the approval of the trade union, other organizations and stakeholders.
- *Human resource management policy implementation phase.* It is recommended to: 1) specify the participants, measures and deadlines for implementing the human resources policy; 2) select the right people and interest them in

taking responsibility for the measures being implemented; 3) change the behaviour of participants, basing the new human resources policy on new relationships, which must be nurtured with special attention; 4) organize employee training, understand, develop and implement the principles of human resources policy.

Publication of the Human Resources Management Policy

The human resource management policy must be a written document declared not only internally, but also externally. The most popular way to publicize a human resource management policy is to declare its main principles on the organization's website and/or intranet so it is accessible to all current and potential employees. In addition, the human resources management policy presented online becomes a means of creating a positive image of the organization. This helps attract potential employees and encourages pride in an organization.

Analysis of organizations' websites shows that they actively publish human resource management policies, employment opportunities, activities and principles related to employee well-being. Official company documents can also be found on websites, which declare the principles and methods on which human resources activities are based. In their declared human resources policy, organizations emphasize that employees are respected and trusted, and that efforts are made to create the safest and most attractive working atmosphere possible. Separate sections discuss the principles of employee development, career opportunities, and human resources recruitment and selection. It emphasizes that organizations strive to attract the most creative and talented candidates, who are carefully selected by the human resources department, that they speak out against racial, religious, and ethnic discrimination, and that they value and adhere to human rights, health, and labour protection laws. In addition, the websites of many organizations provide information about remuneration for work and motivation systems, naming both common and original measures: career opportunities, flexible work schedules, remuneration directly dependent on work results, internal communication system, open communication, feedback, sustainability, and other options.

Human resource management strategy is considered an important part of organizations' human resource direction. As the population grows, competition for qualified professionals also grows. For this reason, organizations are encouraged to actively seek professionals in academic institutions, and to constantly innovate both technologically and ethically. It is important for organizations to pay attention to the diversity of their employees and include the implementation of those differences in their plans. This can be achieved by aligning human resource management strategy policies with organizational strategy.

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2. 5. INTELLECTUAL TECHNOLOGIES IN THE ECONOMIC SECURITY SYSTEM: DATA-DRIVEN RESTRUCTURING OF ENTERPRISES

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Abstract. *The section explores the problem of transforming approaches to ensuring the economic activity of enterprises in conditions of permanent turbulence, digital security of the economy and geopolitical challenges. It is substantiated that the classical paradigm of economic security, which is based on reactive protection from identified threats, is not effective enough in the modern business environment. The need for a fundamental shift from the concept of "security" to the concept of "resilience" is argued - the dynamic ability of an enterprise not only to withstand shocks, but also to proactively adapt and develop.*

The technological basis of such a transition is determined to be the synergy of intelligent technologies, in particular, artificial intelligence (AI) and big data analysis (Big Data). It is proven that these technologies do not allow moving from retrospective analysis to predictive modelling, identifying hidden threats at the stage of their emergence. The central scientific result of the section is the conceptualization of the concept of "data-driven restructuring" (DDR). Unlike the classical understanding of restructuring as a forced anti-crisis measure, DDR is interpreted as a continuous, iterative process of strategic adaptation of the operational, financial and organizational structure of an enterprise, based on objective data and predictive models generated by AI systems.

For the practical implementation of this approach, a holistic methodological toolkit has been developed, consisting of two key components. First, we propose a threat diagnosis algorithm based on predictive analytics, which allows us to calculate an integral indicator of economic security. Second, we have formed a matrix model for choosing the optimal restructuring strategy, which links the type and level of criticality of the identified threat with adequate management actions.

Thus, the section offers a comprehensive scientific and practical concept that transforms economic security from a static protection function into a dynamic, intelligent management process aimed at ensuring the long-term sustainability and competitiveness of the enterprise. The materials will be useful for scientists, business leaders, strategic planning and risk management specialists, as well as for higher education students in economic and management specialties.

Keywords: *economic security, artificial intelligence, big data, data-driven restructuring, predictive analytics, resilience, data management*

Introduction

The modern era, characterized by digital transformation and on-going turbulence, poses new challenges, unprecedented in its stability threats to the economic security of enterprises, making traditional methods of ensuring it ineffective. The scientific approaches laid down in the works of Vasyl Lyashenko and Olga Ilyashenko, which considered security as a state of protection from identified threats, need to be supplemented with tools capable of working with nonlinear risks and large data sets (Lyashenko, Ukrainian language, 2008; Ilyashenko, Ukrainian language, 2003).

Such tools are becoming intelligent technologies, in particular artificial intelligence (AI) and predictive analytics, which are radically changing the management paradigm. As Thomas Davenport rightly noted, competitive advantage today is built on the ability of a company to transform data into effective solutions faster and more efficiently than others (Davenport & Harris, 2007).

The use of AI allows us to move from reactive response to crises to proactive modelling, identifying hidden vulnerabilities in the financial, operational, and market processes of the enterprise. At the same time, strategic restructuring, which Oleg Tereshchenko considered mainly as an anti-crisis financial tool, acquires a new meaning, turning into a managed and continuous process of adaptation (Tereshchenko, Ukrainian language, 2004). However, despite the recognition of the importance of digital innovations, the scientific literature remains unexplored in the mechanism of synergistic combination of intelligent data analysis and strategic decisions on restructuring to strengthen economic security.

Therefore, there is an urgent need to conceptualize the concept of "data-driven restructuring" as a process of changing the business model, operational, or financial structure of a business based on predictive models generated by AI. This approach, based on the ideas of Erik Brynjolfsson and Andrew McAfee about the transformational impact of technology on business, allows to increase the accuracy of management decisions and the adaptability of companies (Brynjolfsson & McAfee, 2014). Thus, the research on this topic is aimed at developing methodological tasks for integrating intelligent technologies into the economic security management circuit, which has high theoretical and practical value for ensuring the long-term sustainability of enterprises.

The scientific novelty of this research lies in the development of a holistic concept that integrates modern intelligent technologies into the strategic management circuit of the economic security of enterprises. The key element of the novelty is the conceptualization of the concept of DDR, which, unlike traditional approaches, justifies restructuring changes not as a reactive anti-crisis measure, but as a continuous, proactive process of strategic adaptation, guided by predictive models. This became possible by improving the scientific and methodological approach to threat diagnostics using predictive analytics, which allows modelling nonlinear risks and identifying hidden vulnerabilities long before their critical manifestation.

Theoretical developments provide enterprise management with scientifically sound tools for making strategic decisions in conditions of high uncertainty. The proposed algorithm for choosing the optimal restructuring strategy based on data analysis allows reducing the level of subjectivity and increasing the accuracy and speed of management activities. Ultimately, the implementation of the developed approach ensures not only the effective minimization of harmful losses from the crisis but also ensures the overall level of stability and adaptability of the company, forming a solid foundation for its long-term competitiveness.

The purpose of the study is the theoretical and methodological justification and development of scientific and practical recommendations for the formation and implementation of data-driven restructuring strategies as a key tool for strengthening the economic security of an enterprise in conditions of increased turbulence.

To achieve the set goal, it seems appropriate to solve certain research questions:

- clarify the essence and expand the components of the economic security of an enterprise, taking into account the challenges of the digital economy.
- substantiate the role of intelligent technologies (AI, Big Data) as the basis for the transition to the proactive management of economic security.
- conceptualize the concept of DDR and its programmatic place in the strategic management system.
- develop a methodological approach to diagnosing the threat to economic security based on predictive analytics.
- form a model for choosing the optimal restructuring strategy based on data generated by AI systems.

The structure of the study is built according to a logical system of movement from theoretical generalizations to the development of practical recommendations and includes a consistent response to the research questions and conclusions.

The methodological basis of the study is created by a systemic approach, which allows the economic security of an enterprise to be revealed as a complex, open system, and intellectual technologies and restructuring - as interconnected elements of managing its stability and adaptability. The study is mainly theoretical and methodological in nature and is based on the methods of theoretical generalization and scientific modelling.

The theoretical basis of the study is the fundamental provisions of the theory of economic security (V. Lyashenko, O. Ilyashenko), the theory of anti-crisis management and restructuring (O. Tereshchenko), as well as the concepts of digital business transformation and data-based management (T. Davenport, E. Brynjolfsson, E. McAfee).

The research process was implemented in three logical stages, each of which was based on a special set of methods:

- theoretical synthesis and problem identification. At this stage, the method of systematic literature review was used to analyse and generalize existing approaches to the definition of economic security and restructuring. Using

comparative and content analysis, a gap was identified between classical security models and the requirements of a digital, turbulent economy, which allowed us to clearly formulate the research problem.

- conceptualization and development of the conceptual apparatus. The use of abstraction and concretization methods allowed us to formulate the author's definition of the concept of DDR. Terminological analysis was used to substantiate the content, goals, objects and key characteristics that distinguish it from traditional types of restructuring.
- the stage of developing a methodological approach. To build a model for choosing a strategy for data-driven restructuring, the method of structural-logical modelling was used, which allowed us to visualize the sequence of stages (diagnosis → forecasting → strategy selection), and the relationships between them. The analogy method was used to adapt known strategic analysis tools to the conditions of using predictive models generated by AI.

The information base of the study was scientific works of domestic and foreign scientists published in leading scientometric databases (Scopus, Web of Science), monographs, as well as analytical reports of leading consulting companies (Gartner, McKinsey, Deloitte) on trends in digital transformation and AI usage in business. The comprehensive application of these methods ensured the reliability and scientific validity of the results obtained.

Main Part

The classical approach to the interpretation of the economic security of an enterprise, which was formed in a relatively stable and predictable market environment, with the aim of ensuring it as a state of protection of the vital interests of the business entity from internal and external threats, thereby ensuring its stable functioning and sustainable development. In the works of leading Ukrainian scientists, in particular T. Vasyltsiv. and V. Lyashenko, economic security is considered as a complex system consisting of a number of functional components: financial, personnel, technical and technological, legal, informational, force and environmental (Lyashenko & Vasyltsiv, Ukrainian language, 2008). This paradigm is focused on identifying existing threats and developing preventive measures to preserve the homeostasis of the business system.

However, the modern operating environment, characterized as a BANI (Brittle, Anxious, Non-linear, Incomprehensible) world, and for Ukraine complicated by a full-scale war, makes the classical model of protection insufficient. Factors of wartime (direct military action, destruction of assets, occupation of territory, mobilization of personnel, attacks on critical infrastructure) and global instability (disruption of logistics chains, energy crisis, galloping inflation, trade wars) transform the very nature of threats – persisting as not just probable, but permanent, non-linear and often existential. In such conditions, the focus of security management shifts from "security and stability" to "resilience and adaptability". Resilience, as Nassim Taleb notes in his research, is a characteristic of a system that is able not only to withstand shocks, but also to benefit from chaos and uncertainty (Taleb, 2012). In the context of an enterprise, this refers to its ability to absorb extreme loads, quickly adapt processes and business models, restore functionality, and use crisis opportunities for further transformation. Accordingly, the clarified essence of the economic security of an enterprise in conditions of turbulence is a dynamic, manageable state characterized by the ability of the business system to proactively identify, absorb and neutralize extreme threats, while maintaining critical functions and the potential for recovery and development due to a high level of adaptability, flexibility and the presence of anti-crisis properties.

This paradigm changes to a significant transformation of both the content of the traditional components of the EBP, and the isolation of new, priority components.

Transformation of the traditional components of the economic security of an enterprise:

1. Financial security. The classical approach (high profitability, financial stability), as studied by O. Baranovsky is supplemented by the imperative of maximum liquidity and access to capital (Baranovsky, Ukrainian language, 2004). The priorities are real-time cash flow management, availability of "financial support", diversification of funding sources (including grant programmes and state aid), war risk insurance, currency risk management in conditions of exchange rate fluctuations.

2. Personnel security. The priority shifts from loyalty and qualifications to physical safety, psychological stability and functional flexibility of personnel. The key tasks are organization of safe working conditions (training), relocation of employees, psychological support programmes, implementation of flexible/remote work formats, development of succession plans and rapid replacement of mobilized key specialists, multitasking and cross-functionality of personnel.

3. Production and technological security. The emphasis is shifted from efficiency and modernization to continuity and autonomy. This requires physical protection and masking of production facilities, diversification and decentralization of production capacities (creation of duplicate sites), ensuring energy autonomy (generators, solar panels), formation of reserve stocks of raw materials and components.

4. Information security. To the traditional protection of trade secrets, the critically important aspect of cyber resilience and countering disinformation is added. As indicated in cybersecurity research in the context of hybrid wars, the optimal protection of IT infrastructure from targeted state cyberattacks (DDoS, ransomware), ensuring data backup in cloud storage outside the country, as well as information hygiene of personnel to counter hostile IPSO.

Identifying new priority components of economic security for an enterprise:

1. Cyber-physical security. While information security used to focus on data protection, in the digital economy and hybrid wars, as Erik Brynjolfsson and Andrew McAfee point out, the line between the digital and physical worlds is blurring. This component combines the protection of IT infrastructure from targeted state cyberattacks (DDoS, ransomware), the security of industrial control systems (OT/ICS), and protection from disinformation that can cause panic or financial losses (Brynjolfsson & McAfee, 2014).

2. Logistics security. In the context of destroyed roads, blocked ports, and trade wars, logistics becomes an independent critical component. As the experience described in the works of Yossi Sheffi shows, the resilience of supply chains is the basis for business survival (Sheffi, 2020). It includes diversification of routes and suppliers (especially with partner countries), creation of backup logistics hubs in safe regions and implementation of real-time cargo tracking system.

3. Reputational and social security. In the era of transparency and social networks, reputation is a key asset. This component includes managing the reputation of a company as a reliable partner, a relevant employer and a patriotic business entity. It covers anti-crisis communications, management of relationships with stakeholders (government, community, investors) and corporate social responsibility (CSR), which in war conditions is transformed into direct assistance to the army and victims.

Therefore, economic security in the modern world is not a static wall, but a dynamic, multi-component system of resilience management, which requires an enterprise not only to have resources, but also organizational flexibility and the ability to make rapid transformational changes. Economic security in turbulent times ceases to be a static state of "security." It becomes a dynamic process of managing resilience, requiring not only resources but also organizational flexibility, strategic foresight, and the ability to rapidly transformative change, with restructuring as a key tool.

The traditional paradigm of economic security management, which has been deeply studied in the works of Ukrainian scientists, is based mainly on a reactive approach. The approach involves identifying existing or obvious threats and developing measures to neutralize or minimize their consequences. In the conditions of a digital economy characterized by exponential growth in data volumes, the speed of business processes, and the complexity of relationships, this approach becomes insufficiently effective. Threats remain nonlinear, hidden in huge amounts of information, and capable of materializing almost instantly, leaving no time for an adequate response.

That is why there has been a fundamental shift from reactive to proactive economic security management. Its essence arises not in responding to problems that have already arisen, but in predicting and preventing such problems based on the analysis of leading indicators. The technological basis that ensures this transition is the synergy of two key intelligent technologies: big data and AI.

Big data is the "fuel" for the new security system. As Victor Mayer-Schönberge and Kenneth Cukier point out, the value of big data is not only in its volume (Volume), but also in its velocity (Velocity) and variety (Variety) (Mayer-Schönberge, 2013). Today, enterprises generate and have access to huge arrays of structured (financial statements, CRM system data) and unstructured (texts from social networks, video from surveillance cameras, data from IoT sensors). The human mind is physically unable to process such a volume of information to detect fixed patterns, which makes traditional analytical methods obsolete. AI, particularly its sub-branches, such as machine learning (Machine Learning) and predictive analytics, is the "engine" that turns grey data into actionable insights. As Thomas Davenport argues, the ability to compete based on analytics is a key advantage for modern companies (Davenport & Harris, 2017). AI algorithms can:

- detect anomalies: find atypical patterns in financial transactions that may indicate fraud, or deviations in equipment operation preceding a failure.
- build predictive models: predict the probability of counterparty default, cash gaps, the outflow of key customers or employees, fluctuations in demand.
- analyse unstructured data: conduct sentiment analysis of social media posts about the company for early detection of reputational threats, analyse customer feedback to prevent a decline in product quality.

Research by McKinsey (which is actively implementing AI) demonstrates significantly higher efficiency and sustainability indicators (McKinsey & Company, 2023). This confirms that intelligent technologies can create an enterprise's own "digital nervous system" that monitors several parameters in real time, signalling some threats long before they become critical. This approach completely changes the logic of security management, as Table 1 clearly demonstrates.

Table 1. Comparison of Reactive and Proactive Approaches to Economic Security Management

Functional component of economic security of an enterprise	Traditional (reactive) approach	Proactive approach (based on AI and Big Data)
Financial Security	Analysis of financial statements for past periods, response to cash gaps that have already occurred	Predictive cash flow modelling, real-time counterparty scoring, anomaly detection of fraudulent transactions
Industrial and Technological Security	Repair of equipment after breakdown, response to disruptions in raw material supplies	Predictive maintenance based on data from IoT sensors, risk modelling in supply chains
Human Resources Security	Work with staff turnover post-factum, analysis of reasons for dismissal	Predictive flight risk prediction of key employees based on analysis of their digital activity, preventive measures for their retention
Market and Reputational Security	Responding to negative publications in the media, holding press conferences after a reputational crisis	Sentiment analysis of social networks and online media to detect the emergence of reputational threats, modelling of competitor actions
Cybersecurity	Eliminating the consequences of cyberattacks, restoring data from backups	AI-powered intrusion detection systems (AI-powered IDS/IPS), user behaviour analysis to detect insider threats

Source: McKinsey & Company, 2023

Thus, intelligent technologies are not just additional tools, but a fundamental basis for the transition to a new management paradigm. They have left behind economic security with static protection functions to a dynamic, intelligent risk management process, which, as Erik Brynjolfsson and Andrew McAfee point out, is a key feature of the "second machine age" enterprise (Brynjolfsson & McAfee, 2014). This transition from defense to prediction and preventive action is the only effective way to ensure long-term sustainability and competitiveness in conditions of permanent turbulence. Traditionally, in scientific literature and management practice, restructuring is perceived as a forced, discrete and often painful process aimed at overcoming a deep crisis. In works devoted to crisis management, in particular Stuart Slatter, it is considered as a tool of financial recovery or operational recovery, launched in response to already existing critical problems: unprofitability, loss of solvency, falling market share. Decisions in such a paradigm are made based on the analysis of historical data, financial statements and, to a large extent, the intuition and experience of top management (Slatter, 1999).

In countries with developed market economies, the concept of "restructuring" has long become an integral part of the activities of enterprises, banks and other organizations. For foreign corporations, this means a constant and natural process of adaptation and restructuring aimed at responding to external changes. In modern conditions, where the business environment is rapidly transforming, the ability to maintain resilience to the influence of negative factors becomes a key strategic task for any economic entity. Effective restructuring is one of the most important tools for ensuring long-term competitive advantages and strategic stability of an enterprise in the market.

Let us begin our study by analyzing the essence and economic characteristics of enterprise restructuring. Despite the significant number of scientific works devoted to this topic, there is still no single position in economic science on the definition of 'enterprise restructuring'. In our opinion, for a deeper understanding of this category, it is necessary to consider not only the theoretical approaches of economists, but also the regulatory and legal aspects of the concept. According to the Code of Ukraine on Bankruptcy Procedures, restructuring is interpreted as a set of measures of an organizational and economic, financial and economic, legal and technical nature aimed at reorganizing an enterprise. These measures may include the division of an enterprise with the transfer of debt obligations to a new legal entity that is not subject to rehabilitation, if this is provided for in the rehabilitation plan. In addition, restructuring may include a change in the form of ownership, organizational and legal status or management system of the enterprise. The main purpose of such measures is the financial recovery of the enterprise, increasing the volume of production of competitive products, increasing the efficiency of activities, and ensuring the fulfilment of obligations to creditors.

Most scholars agree that enterprise restructuring should be carried out at an early stage, before the bankruptcy procedure begins. It should not be considered as a way out of a crisis situation, but as a preventive measure aimed at preventing the emergence of financial difficulties. In view of this, it is worth considering other aspects of this concept in more detail (Arefyev, Ukrainian language, 2014).

In particular, the following approaches are distinguished among the main areas of restructuring:

- "cutting off the excess" — involves the elimination of unprofitable structural units and the reduction of unqualified personnel.
- creation or merger — includes the formation of new units or the integration of existing businesses into the enterprise.
- transformation — is focused on the creation of new structural units, the acquisition of existing businesses, the expansion of the range of products and production.

These measures are aimed at increasing the efficiency of an enterprise and its stability in a competitive environment.

The study found that restructuring can serve not only as a means of overcoming crisis phenomena but also be an effective tool at different stages of the enterprise's life cycle. The following definition has been developed: restructuring is the process of implementing a set of organizational, economic, financial, social, and technical and technological measures aimed at optimizing and increasing the effectiveness of an enterprise's activities at any stage of its functioning.

Restructuring of an industrial enterprise represents a set of measures aimed at changing the structure of an enterprise, its organization, management, financial or technological system to increase its efficiency. It can be of different types depending on the goals and objectives. A detailed description of the main types of restructuring is given in Table 2.

Table 2. Characteristics of the Main Classical Types of Enterprise Restructuring

Type of restructuring	Essence	Purpose	Measures
Organizational	Change in the management structure of the enterprise; merger of divisions, creation of new departments, optimization of management chains, reduction of personnel	Improving management, reducing costs, increasing flexibility	Reorganization of the hierarchical structure; transition to a matrix or project structure; outsourcing of some functions; debt restructuring through negotiations with creditors to change the terms of payments or reduce the debt load; sale of non-core assets to increase liquidity; reorganization of the management structure of the enterprise, for example, by reducing unnecessary management levels; outsourcing of non-core functions, such as logistics or IT support
Financial	Measures to improve the financial condition of the enterprise: debt management, refinancing, change in the capital structure	Ensuring financial sustainability	Restructuring of debts (negotiations with creditors, change in payment terms); sale of part of the assets; attraction of new investments
Technological	Update of production processes and introduction of the latest technologies	Increasing productivity, reducing costs, improving product quality	Modernization of equipment; introduction of automation and digital technologies; optimization of the technological cycle; introduction of energy-saving technologies to reduce costs; automation of production processes and digital transformation to increase productivity; reconstruction of outdated equipment
Production	Change in the structure of production to ensure more efficient use of resources	Adapting to market needs, reducing costs	Re-profiling of production; change in the volume or range of products; liquidation of unprofitable production capacities; optimization of production capacities by closing unprofitable workshops; transition to the release of new products in accordance with market trends
Marketing	Change in marketing and sales strategy	Increasing competitiveness in the market, increasing sales	Restructuring of sales channels; entering new markets; reorganization of the advertising campaign and rebranding

Type of restructuring	Essence	Purpose	Measures
Social	Measures aimed at improving the social component of enterprises	Increasing staff motivation and loyalty	Increase in wages; development of training and advanced training programmes; improvement of working conditions
Legal	Change in the legal aspects of the enterprise's activities	Minimizing legal risks	Change in the organizational and legal form of the enterprise; optimization of contracts with partners; liquidation or merger of legal entities

Source: (Cyplicka, Ukrainian language, 2022)

Each type of restructuring can be carried out both separately and collectively, depending on the needs of an enterprise. For example, in the event of a serious financial crisis, financial, production and organizational restructuring may be required simultaneously.

However, in the digital economy, where the speed of change and the volume of information are growing exponentially, such a reactive approach becomes strategically unprofitable. There is an urgent need for a new tool that would allow not only to react to crises but get ahead of such crises by adapting the business model proactively. Such a tool is DDR.

DDR is a managed, continuous and iterative process of making strategic changes to the operational, financial, organizational or portfolio structure of an enterprise, based on the analysis of big data (Big Data) using intelligent technologies (AI, Machine Learning) to proactively increase the level of economic security, sustainability and long-term competitiveness.

The key difference between DDR and the classical approach is the change in the logic of decision-making itself: from "reacting to the past" to "acting based on the predicted future". This concept is based on Thomas Davenport's ideas about analytics-based competition, the ability to transform data into predictive models is a key source of advantage (Davenport & Harris, 2017). The differences between the traditional approach and data-driven restructuring are systematized in Table 3.

Table 3. Comparative Characteristics of Traditional and Data-driven Restructuring

Comparison criterion	Traditional restructuring	Data-driven restructuring (DDR)
Main goal	Survival, restoration of solvency, exit from the crisis	Increasing resilience, gaining competitive advantage, proactively strengthening economic security
Trigger	Critical financial indicators, falling sales, creditor pressure	Predictive signals from AI system (forecasted cash gap, risk of customer churn, changing market trends)
Basis for decision making	Historical data, financial statements, management experience and intuition	Big Data analysis, predictive machine learning models, scenario modelling results
Time horizon	Short-term and medium-term	Long-term, focused on future opportunities and threats
Nature of the process	Discrete, project-based, rosy measure	Continuous, iterative, cyclical process of continuous improvement
Main result	Restoration of stability, return to the break-even point	Increasing adaptability, creating an anti-crisis business model that is able to develop in conditions of uncertainty

Source: compiled by the author

Based on this, DDR is not a separate project but becomes an integral part of the modern strategic management system, built into the classic cycle "analysis → planning → implementation → control". However, unlike the linear model, DDR turns this cycle into a dynamic, continuous spiral. Its place in the strategic management system is clearly illustrated in Figure 1. As can be seen from the figure, the process begins with the collection and processing of big data from internal (ERP, CRM, finance) and external (social networks, market reports, news) sources. Next, the AI platform conducts predictive analysis, the result of which is not just reports about the past, but predictive models and scenario analysis - "What will happen if...?". At this stage, current threats to economic security (e.g., the probability of a key supplier default) or new market opportunities (e.g., the emergence of a new consumer demand) are identified.

On the basis of these forecasts, top management makes a strategic choice, formulating alternative restructuring options:

- operational DDR: change of business processes to increase efficiency based on modelling of bottlenecks.
- financial DDR: optimization of the capital structure based on the forecast of interest rates and availability of financing.
- portfolio DDR: decision to exit markets that are predicted to stagnate, or investments in areas with high growth potential.

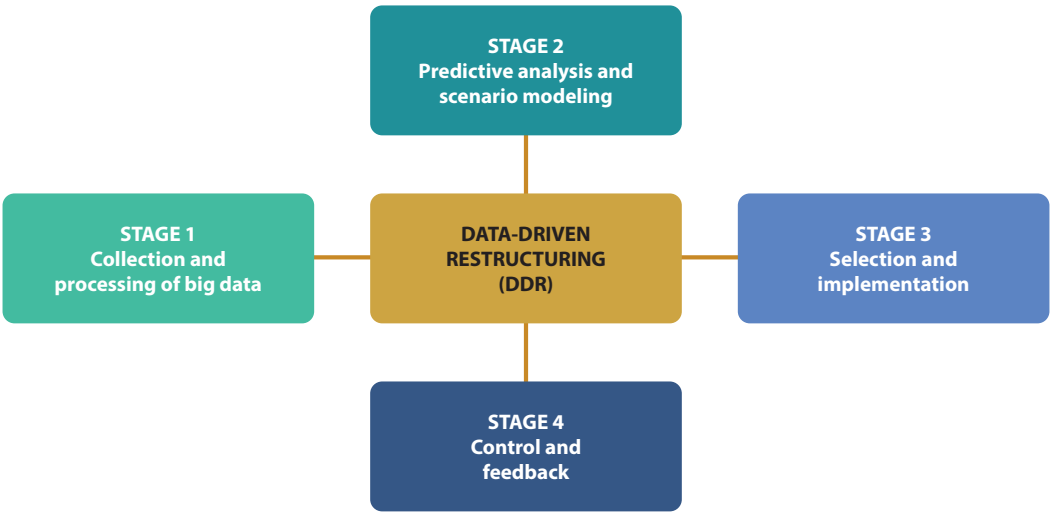


Figure 1. DDR in the strategic management system of an enterprise
Source: compiled by the author

The stage of implementation of restructuring changes is constantly monitored. Data on the results of implementation (change in KPIs, market reaction) again enters the data collection system, closing the loop. Thus, DDR is a practical implementation of the concept of "emergent strategy" (strategy that occurs), described by Henry Mintzberg (Mintzberg, 1994), but at a new technological level. It allows a company to not just follow a pre-developed plan, but to constantly adjust its course, learning and adapting to the environment in real time. This is the embodiment of the ideas of Erik Brynjolfsson and Andrew McAfee about the enterprise of the "second machine age", where the ability to quickly learn from data is the main source of resilience (Brynjolfsson & McAfee, 2014).

Therefore, data-driven restructuring is not just a technological update of the tools, but a fundamental change in management philosophy, transforming an enterprise from a rigid hierarchical structure into an efficient, self-learning organism capable of functioning effectively in conditions of permanent uncertainty.

Traditional methods of diagnosing threats to economic security, which are based on the analysis of financial ratios, expert assessments and analysis of reporting for past periods, have significant limitations in the conditions of the modern business environment. As Oleksandr Baranovsky noted in his works on financial security, these methods are mainly retrospective, that is, they identify problems after the fact, when the potential for preventive actions has already been significantly narrowed (Baranovsky, Ukrainian language, 2004). They poorly consider the nonlinear relationships hidden in the data and the subjectivity of expert opinions, which in conditions of uncertainty can lead to erroneous conclusions.

The transition to the proactive management of economic security requires the development of a new methodological approach based on predictive analytics tools. Predictive analytics, as defined by one of the leading experts in this field, Eric Siegel, is a technology that learns from experience (data) to predict the future behaviour of individuals with the aim of making better decisions (Siegel, 2016). Applying this approach to threat diagnostics allows us to move from the question "What happened?" to the question "What is most likely to happen and why?"

The proposed methodological approach to diagnosing threats to the economic security of an enterprise based on predictive analytics is a complex algorithm consisting of four consecutive stages (Fig. 2).

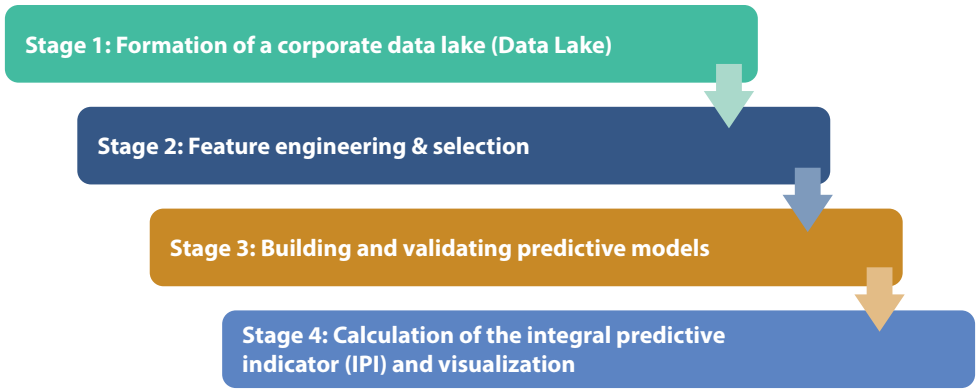


Figure 2. Algorithm for Diagnosing Economic Security Threats based on Predictive Analytics
Source: compiled by the author

Stage 1. Formation of a corporate data lake (Data Lake). The basis of any predictive analysis is data. At this stage, a single centralized repository is created, where in real time or at high speed the following data flows from various sources:

- internal structured data: ERP systems (finance, production, logistics), CRM systems (history of interaction with customers, transactions), HR systems (personal data);
- internal unstructured data: texts from corporate mail and messengers, data from the access control system, logs of IT systems.
- external data: market indices, exchange rates, raw material prices, news, mentions of companies and competitors in social networks and the media, reports of analytical agencies, data on court registers. Creating such a data lake allows you to get a 360-degree overview of the company's activities and its assessment, which is a prerequisite for identifying complex, non-obvious relationships.

Stage 2. Feature Engineering & Selection. Raw data cannot be used for modelling. At this stage, using special methods, they are converted into "features" - informative changes that can have predictive power. For example, instead of a simple date of the last purchase, the client created features: "number of days since the last purchase", "average check for the last month", "change in purchase frequency". After generating hundreds or thousands of these features, using statistical methods (correlation analysis, factor analysis) and machine learning algorithms (e.g., based on the principles modified in the Random Forest model), the largest values are selected to predict a specific threat.

Stage 3. Building and validating predictive models. This is the core of the methodological approach. Depending on the type of threat being diagnosed, different classes of machine learning models are used:

- classification models (Logistic Regression, Support Vector Machines, Gradient Boosting): a stone for predicting binary events (yes/no). For example, "Will a key employee leave in the next 3 months?", "Will a counterparty be late with a payment?"
- regression models (Linear Regression, Neural Networks): predict continuous numerical values. For example, "What will be the sales volume in the next quarter?", "What is the expected level of customer churn?"
- clustering models (K-Means, DBSCAN): detect hidden groups with similar behaviour. For example, segmenting customers into risk groups, identifying anomalous groups of transactions. Each model is trained on historical data, where the result is already known, and then undergoes a verification process on new data to assess its accuracy (accuracy, precision, recall).

Stage 4. Calculation of the integral predictive indicator (IPI) and visualization. The results of dozens of different models are difficult to interpret. Therefore, at this stage it is proposed to calculate the Integral Predictive Indicator of Economic Security (IPI-EB). This is a weighted index that compensates for the probability of various threats in a single indicator or in several indicators according to the key components of the EBS. The weighting factors for each threat arise expertly, based on its negative impact on the activities of an enterprise.

The diagnostic results are visualized in the form of interactive dashboards (information panels). This allows management to see the company's "pulse" in real time: the overall level of threats (IPI-EB), dynamics by individual components, a list of the top 10 most risky counterparties or employees and also receive automatic notifications (alerts) when threshold values are exceeded. This approach corresponds to the concept of data-driven management popularized by Thomas Davenport, where analytics becomes accessible and understandable for managers, not just for analysts (Davenport&Harris, 2017).

The practical application of the proposed approach to various components of the economic security of the enterprise is given in Table 4.

Table 4. Examples of Using Predictive Analytics to Diagnose Threats to the Economic Security of an Enterprise

Component of economic security of the enterprise	Key threats	Data sources	Predictive model type	Example of a predictive indicator
Financial	Cash gaps, counterparty default, fraud	ERP, CRM, bank statements, market data	Regression, classification	Probability of default of the counterparty (PD score), forecast of cash flow for 30 days
Market	Loss of market share, customer churn	CRM, sales data, social media, web analytics	Classification, regression	Probability of outflow for each customer (churn score), forecast of demand for products
Human Resources	Key employee layoffs, professional burnout	HR systems, corporate communications data, surveys	Classification	Probability of dismissal of the employee (flight risk score), index of energy of the team
Operational	Equipment failures, supply chain disruptions	Data from IoT sensors, logistics systems, supplier data	Classification, time series	Probability of refusal of equipment in the next 7 days, forecast of delivery terms

Source: compiled by the author

The introduction of such a methodological approach allows for a fundamental transition from passive monitoring to proactive management. It provides objectivity (decisions are based on data, not intuition), complexity (considers several factors simultaneously) and speed (allows response to threats upon emergence). This approach is a practical embodiment of Nassim Taleb's ideas about the need to develop systems that are resistant to unexpected events and is a key prerequisite for the successful implementation of a data-driven restructuring strategy (Taleb, 2007).

The result of threat diagnostics based on predictive analytics is a set of multiple and qualitative indicators that signal some dangers. However, these data are not a solution in themselves. The key management task arises in the correct interpretation of these signals and the selection of an adequate strategic response. Traditional strategic choice tools, such as the BCG matrix or the Ansoff matrix, although useful for analyzing a product portfolio or growth directions, are not adapted to work with dynamic, multidimensional data on threats generated in real time (Ansoff, 1965). Being static, they do not take into account the likely nature and speed of threat development.

To overcome these limitations, the author's model of choosing the optimal strategy of DDR is proposed. This model is a logical continuation of staged diagnostics and serves as a bridge between data analysis and making specific management decisions. Its goal is to provide a scientifically based, objective choice of the type and depth of restructuring changes that best match the nature and level of the identified threat.

The overall structure of the model consists of three key blocks (Fig. 3):

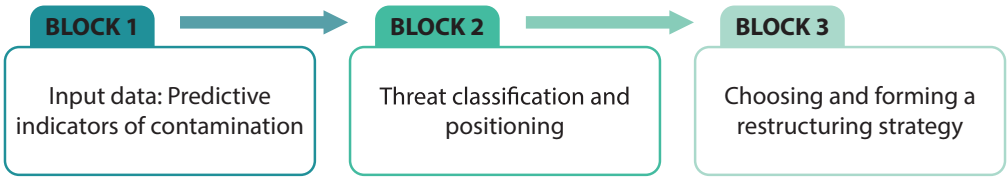


Figure 3. Model for Choosing a Strategy for Data-driven Restructuring

Source: created by the author

Block 1. Input data: Predictive indicators of threats. The model input includes the results of the diagnostics conducted at the previous stage:

- integral predictive indicator of economic security (IPI-EB), which shows the overall level of risk.
- indicators for individual components of the enterprise's economic security (financial, market, operational, personnel, etc.), which risk changing the dominant area of threat occurrence.
- forecasted time horizon of threat materialization (short-term, medium-term, long-term);
- assessment of the negative impact of the threat on key performance indicators (KPIs).

Block 2. Classification and positioning of the threat. This is the analytical core of the model. Based on the input data, the system (or the manager with its help) classifies the current period according to two key criteria:

- first - the dominant threat area: it is determined which of the components of the enterprise's economic security is the source of the greatest risk (for example, the financial sphere due to the predicted cash gap or the market sphere due to the probable outflow of customers).
- second - the level of threat criticality: the combination of the probability of occurrence and the negative impact of the threat is assessed. It is proposed to distinguish three levels:
- zone of proactive actions (low level): the threat has a low probability or insignificant impact, but its monitoring indicates a negative trend. This is a zone for preventive actions and opportunities for use.
- zone of adaptive actions (medium level): the threat has a high probability of realization in the medium term and can cause significant damage. Corrective measures are required.
- zone of crisis response (high level): the threat is imminent in the short term and is of an existential nature for the business. Immediate and radical actions are required.

The result of this stage is the positioning of the current situation of the enterprise in the Matrix of choosing a date-driven restructuring strategy (Table 6).

Block 3. Selecting and forming a restructuring strategy. The matrix also links the threat position with the recommended primary restructuring strategy.

Table 6 - Matrix for Choosing a DDR strategy

Dominant area of threat occurrence	Threat severity level (based on predictive analytics)	Strategy	Goal
FINANCIAL (Forecasting cash gaps, liquidity decline, counterparty default risk, exchange rate fluctuations)	LOW (Proactive Action Zone)	Proactive financial restructuring	Increasing financial flexibility and resilience to future shocks
	MEDIUM (Adaptive Action Zone)	Corrective financial restructuring	Restoring financial balance and stabilizing cash flows
	HIGH (Crisis Response Zone)	Radical financial restructuring (rehabilitation)	Immediately preventing bankruptcy and company survival
OPERATIONAL (Predicting equipment failures, supply chain disruptions, productivity declines, cost increases)	LOW (Proactive Action Zone)	Proactive operational restructuring	Gradually increasing the efficiency and flexibility of processes
	MEDIUM (Adaptive Action Zone)	Corrective operational restructuring	Eliminating identified "bottlenecks" and increasing reliability
	HIGH (Crisis Response Zone)	Radical operational restructuring	Rapid and drastic cost reduction, preserving critical functions
MARKET / PORTFOLIO (Forecasting customer churn, falling demand, increasing competition, market stagnation)	LOW (Proactive Action Zone)	Proactive portfolio restructuring	Searching for new sources of growth and diversifying risks
	MEDIUM (Adaptive Action Zone)	Corrective market restructuring	Maintaining market positions and adapting the value proposition
	HIGH (Crisis Response Zone)	Radical portfolio restructuring	A radical change in the business model for survival
ORGANIZATIONAL / PERSONNEL (Predicting key employee turnover, decreased engagement, professional endurance, competency mismatch)	LOW (Proactive Action Zone)	Proactive organizational restructuring	Developing human capital and increasing organizational flexibility
	MEDIUM (Adaptive Action Zone)	Corrective organizational restructuring	Adjusting structure and competencies to new tasks
	HIGH (Crisis Response Zone)	Radical organizational restructuring	Rapidly reducing personnel costs and maintaining manageability

Source: developed by the author

Examples of a DDR strategy for each dominant threat area, depending on the level of threat criticality, are given below.

Financial threat area:

- low level of threat criticality - optimization of the capital structure (increase in the share of equity); hedging of currency and interest risks; diversification of financing sources (attraction of grants, issuance of bonds); revision of dividend policy for reinvestment.
- medium level of threat criticality - optimization of the capital structure (increase in the share of equity); hedging of currency and interest rate risks, diversification of financing sources (attracting grants, issuing bonds), reviewing dividend policy for reinvestment.
- high level of threat criticality - sale of non-core assets to generate cash. Freezing investment projects; negotiations with creditors on writing off part of the debt; attracting a strategic investor (including with internal control).

Operational scope of threat occurrence:

- low level of threat criticality - implementation of lean technologies (lean production) to eliminate losses; pilot projects for automation and routine operations automation; optimization of logistics routes based on predictive models; implementation of program efficiency.
- medium level of threat criticality - reengineering of key business processes (BPR); outsourcing of non-core and inefficient functions (accounting, cleaning); diversification of the supplier base and creation of reserve stocks; implementation of a total quality control (TQM) system.
- high level of threat criticality - closure of unprofitable production lines or branches; simplification of the product range to the largest rolling positions; complete abandonment of own production in favour of contract sales; decentralization of production to reduce the risk of its complete shutdown.

Market (portfolio) area of threat occurrence:

- low level of threat criticality - R&D and product development for new market niches identified by AI; testing entry into new geographic markets; creating strategic alliances for joint development of technologies; developing digital sales channels and direct interaction with customers (D2C);
- medium level of threat criticality - reviewing pricing policy and implementing a loyalty program; launching targeted marketing activities for risk segments; rebranding or changing product positioning; exiting the least profitable market segments.
- high level of threat criticality - selling entire business lines; complete exit from the market or its temporary freezing; merging with a stronger competitor; pivoting the business - reorienting to a completely new product/market.

Organizational / personnel sphere of threat emergence:

- low level of threat criticality - implementation of flexible management methodologies (Agile, Scrum); launch of a talent development program and formation of a personnel reserve; development of a corporate culture focused on innovation and cooperation; implementation of digital workplaces (Digital Workplace);
- medium level of threat criticality - optimization of the organizational structure (simplification, elimination of duplication of functions); change of the motivation system and KPIs to focus on new goals; personnel reskilling and upskilling programmes; introduction of hybrid/remote work formats.
- high level of threat criticality - mass staff reduction; transfer of employees to part-time work/week; outstaffing (withdrawal of personnel outside the company's staff); radical centralization of decision-making.

It is important to emphasize that in real conditions, threats arise one-dimensionally. For example, a market threat (fall in demand) will not lead to financial problems. Therefore, the model provides for the formation of a hybrid strategy, where the selected primary strategy (e.g., market strategy) is supplemented with elements from other strategies (e.g., financial and operational) to comprehensively solve problems. As Michael Porter noted, sustainable competitive advantage is achieved when all types of company activities mutually reinforce each other (Porter, 1996). Similarly, effective restructuring requires coordinated changes in different subsystems of the enterprise. This data- and modelling-based approach is a practical embodiment of Thomas Davenport's ideas about analytics-based management and McKinsey's findings that leading companies require data to make faster and more accurate strategic decisions (Davenport&Harris, 2017; McKinsey & Company, 2022). Unlike static models, the proposed system is dynamic: the company's position on the matrix can change in real time, which requires management to be constantly ready to adjust the strategic course, which is a key requirement for modern management.

Thus, the developed model allows the elimination of complex, multidimensional data generated by AI systems into clear, substantiated and effective strategic alternatives, which is a necessary condition for ensuring the long-term viability and economic security of the enterprise in conditions of permanent turbulence.

It seems appropriate to propose specific ways of restructuring the Ukrainian energy company, which operates in extremely difficult conditions of military conflict and has many capacities in temporarily occupied territories. Based on the conducted research into the external extremely critical conditions of out staffing the energy supply company operation, it seems appropriate to propose an action plan for the financial and organizational restructuring of the energy supply company in the conditions of military conflict, which consists of three stages.

First, financial restructuring. It involves:

- conducting an analysis of the company's financial condition, namely - inventorying assets (assessment of the level of destroyed, damaged and inaccessible assets, the volume of liquid assets), assessing the current level of receivables and payables, identifying the costliest budget items and finding ways to optimize them.
- debt restructuring, namely - negotiations with creditors on instalment payments, lowering interest rates or temporarily freezing payments, attracting state support to cover debts; introducing debt restructuring programmes for consumers (instalments, deferrals);
- attracting additional financing, i.e. establishing partnerships with international organizations to obtain grants and loans (IMF, World Bank, EBRD, "green" recovery programmes), attracting investments through the issuance of bonds under state guarantees, attracting strategic investors in the energy sector; creating transparent reports to demonstrate to investors the efficiency of using funds.
- cost optimization, namely - introducing energy-saving technologies; automating processes to reduce personnel costs; temporarily freezing low-profit projects.

Secondly, organizational restructuring. This involves the implementation of the following measures:

- reorganization of the management structure, i.e., the introduction of an anti-crisis headquarters for operational decision-making, centralization of key functions (finance, logistics, supply) to ensure effective management, creation of specialized teams for work in regions affected by military operations.
- optimization of personnel, namely - conducting an audit of employees to identify critical positions, retraining personnel to perform new functions, development of support programmes for employees working in hazardous conditions, including insurance and additional compensation.
- improvement of operational processes, i.e. the implementation of digital solutions for asset management, monitoring the state of networks and responding to accidents, development of plans for rapid restoration of infrastructure after destruction, introduction of a remote customer service system.
- reorientation of the business model, namely - expansion of activities through the development of alternative energy sources (solar, wind), implementation of "energy cooperative" programmes to involve the population in joint energy production, creation of new products and services focused on current needs, for example, mobile energy systems for the military and critical infrastructure.

Thirdly, ensuring resilience in war conditions. It involves the implementation of the following measures:

- protection of critical infrastructure - investing in physical security measures for facilities (fortifications, backup systems), installation of autonomous energy systems to support the operation of key facilities in the event of accidents.
- cybersecurity - development of comprehensive measures to protect control systems from cyberattacks, constant testing and modernization of software.
- communication with stakeholders - regular informing the population about the company's measures to ensure energy supply, building trust through transparency and responsibility in the use of resources.

Conclusions and Recommendations

The conducted research proves that modern economic security is transforming from reactive protection to proactive resilience management, the technological basis of which is intelligent technologies. The key scientific result is the conceptualization of the concept of DDR as a continuous adaptation process guided by predictive models. For its practical implementation, a holistic model has been developed, which includes a method for predictive threat diagnostics and a matrix for choosing the optimal restructuring strategy. The prospects for further research lie in the area of

empirical verification of the proposed models for various industries and solving the "black box" problem by integrating explainable artificial intelligence (XAI). Regardless, the main attention needs to be paid to the organizational, ethical and legal aspects of implementing such systems, as well as research into the potential of generative AI for automating strategic scenario planning.

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2.6. ENTREPRENEURIAL ASPIRATIONS OF STUDENTS: BARRIERS AND PLANS TO START BUSINESS

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Abstract *This article explores university students' entrepreneurial aspirations, and the barriers preventing them from turning business ideas into reality. Despite a high level of interest in entrepreneurship, few students take concrete steps toward starting a venture. The study is grounded in the Theory of Planned Behaviour and analyses financial, psychological, educational, institutional, and market-related obstacles faced by young entrepreneurs. Based on survey data, the most significant factors influencing students' decisions to launch a business are identified. The findings highlight the importance of comprehensive support and tailored educational programmes to stimulate entrepreneurial activity among youth.*

Keywords: *entrepreneurial aspirations, students, entrepreneurial barriers, Theory of Planned Behaviour, entrepreneurial intentions, financial barriers, psychological barriers, educational support, institutional support, youth entrepreneurship.*

Introduction

The idea of starting a business appeal to a growing number of university students. For many, entrepreneurship is not just about financial gain - it represents autonomy, creativity, and the opportunity to shape a meaningful and self-directed career. Yet despite this interest, relatively few students take concrete steps toward starting a venture. This gap between aspiration and action has drawn increasing attention from scholars in the fields of entrepreneurship and education.

Understanding what encourages or inhibits students from pursuing entrepreneurship is crucial - not only for academic research, but also for those designing educational programmes and support structures. Much of the existing literature focuses on factors that promote entrepreneurial intention. One of the most influential models, the Theory of Planned Behaviour (Ajzen, 1991), highlights the importance of attitudes, perceived social norms, and a sense of control over outcomes. Further research has emphasized traits such as self-efficacy, risk tolerance, and exposure to entrepreneurial role models as key predictors of intention (Zhao et al., 2005; Liñán et al., 2011).

However, as several authors have noted, far fewer studies examine why students hold back, even when they express a clear interest in entrepreneurship. In their systematic literature review, Xanthopoulou and Sahinidis (2024) argue that many researchers focus on motivation while overlooking the perceived barriers that prevent students from translating intentions into action. These may include a lack of startup capital, fear of failure, insufficient knowledge, or a lack of institutional and social support - all of which can undermine confidence and stall decision-making.

Qualitative evidence helps illustrate the emotional and practical challenges students face. In a recent study, Al-Fattal (2024) found that while most business students associated entrepreneurship with freedom, success, and self-expression, they also cited a range of concerns - from not knowing where to begin, to feeling unprepared for the financial and psychological demands of business ownership.

This study aims to build on such findings by focusing specifically on the barriers students perceive as limiting their entrepreneurial potential. Drawing on survey data from university students, we identify and rank the most frequently cited obstacles and explore how these reflect broader patterns in the literature. In doing so, the research contributes to a more grounded understanding of how students experience entrepreneurship - and what might be done to better support them in turning intention into action.

Literature Analysis

Over the past decade, student entrepreneurship has become a central theme in academic research and education policy. Young people are increasingly seen not only as a source of innovation and creativity, but also as important drivers of economic renewal, particularly in uncertain labour markets. Despite this growing interest, most students who express a desire to start a business never take concrete steps toward entrepreneurship. This gap highlights the importance of studying both the motivations and the perceived barriers that influence entrepreneurial behaviour during university years.

The most widely used conceptual framework for understanding entrepreneurial intentions is the Theory of Planned Behaviour (TPB) developed by Ajzen (1991). This model suggests that intention is shaped by three factors:

- personal attitudes toward entrepreneurship.
- perceived social norms; and
- the individual's belief in their ability to carry out the behaviour (perceived behavioural control).

When applied to entrepreneurship, TPB emphasizes that motivation alone is insufficient - students also need to believe they can succeed and feel supported by their environment. Other influential models, such as Shapero and Sokol's Entrepreneurial Event Model (1982), focus more on life events and perceived feasibility, adding further depth to our understanding of how students move from intention to action.

Personal and Demographic Factors

Numerous empirical studies confirm that certain personal traits correlate positively with entrepreneurial intention. These include:

- self-efficacy (belief in one's own abilities);
- proactiveness.
- risk tolerance.
- internal locus of control; and
- a creative mindset (Liñán et al., 2011; Zhao et al., 2005).

In addition, demographic and background characteristics matter. Students with family members who run a business are more likely to express entrepreneurial intentions, as are those with prior work experience or involvement in entrepreneurial projects (Xanthopoulou & Sahinidis, 2024).

Motivation and Meaning

Entrepreneurship is not just about financial gain. For many students, it represents a path to self-expression, independence, and impact. Common motivations include:

- the desire for freedom and autonomy.
- dissatisfaction with traditional employment paths.
- ambition to "do something meaningful"; and
- a belief that entrepreneurship allows them to shape their future (Fayolle & Gailly, 2015).

Students who are driven by these intrinsic motivations often display stronger and more consistent intentions over time, though they may still hesitate when confronted with external barriers.

Barriers: What Holds Students Back

Despite high levels of interest, a wide range of obstacles continue to hold students back. The literature identifies five main types of barriers.

Table 1. Key Barriers Hindering Students in Entrepreneurship

Type	Examples
Financial	Lack of startup capital; difficulty accessing funding
Psychological	Fear of failure; anxiety; low confidence
Educational	Insufficient business knowledge or skills; uncertainty about where to start
Institutional	Lack of university support; absence of mentoring or incubators
Cultural/Social	Pressure from family; negative stereotypes about entrepreneurship

Among these, financial concerns are cited most frequently. For example, in a qualitative study of business students, more than two-thirds named funding as their biggest challenge (Al-Fattal, 2024). However, many students also report "internal" barriers such as fear, self-doubt, and uncertainty about how to turn an idea into a viable business.

Despite high interest levels, students often report a wide range of perceived obstacles that inhibit entrepreneurial action. The literature identifies the following frequently cited barriers.

Table 2. Common Barriers to Student Entrepreneurship: Categories, Examples, and Sources

Category	Examples	Sources
Financial	Lack of start-up capital, limited access to funding	Al-Fattal (2024); GEM Reports
Psychological	Fear of failure, lack of confidence, mental health concerns	Xanthopoulou & Sahinidis (2024)
Educational	Lack of business knowledge and skills, uncertainty about how to start	Zhao et al. (2005); Fayolle (2015)
Institutional	Limited university support, lack of mentorship or incubators	Al-Fattal (2024); OECD (2021)
Cultural / Family	Family scepticism, negative perceptions of entrepreneurship as a career path	Xanthopoulou & Sahinidis (2024)

The financial barrier is among the most frequently cited — over 60% of students in qualitative studies perceive funding as the most difficult hurdle (Al-Fattal, 2024). This barrier is often seen as external and uncontrollable, whereas lack of knowledge is viewed as something more solvable.

The Role of the University Environment

The university setting plays a crucial role in shaping both the confidence and capabilities of aspiring entrepreneurs. Institutions that offer hands-on entrepreneurial education, access to mentors and startup competitions, and exposure to real-world business challenges are more successful in converting intention into action (Fayolle & Gailly, 2015).

Effective programmes emphasize:

- experiential learning (e.g., hackathons, business simulations);
- interdisciplinary collaboration.
- access to networks and investors; and
- the development of emotional resilience and leadership skills.

Recent reviews (Xanthopoulou & Sahinidis, 2024) stress that it is not only the presence of courses that matters, but also the pedagogical design — whether it encourages experimentation, supports risk-taking, and creates space for trial and error.

Methodology

As part of this study, a structured questionnaire was developed to explore how university students perceive barriers to starting a business. 272 students were surveyed starting from October 1, 2024 to February 1, 2025 in Latvia, Lithuania, Spain, Ukraine and Uzbekistan. The survey was anonymous and emailed via internal systems of the HEI's, inviting students to participate in the research.

The list of barriers was informed by a review of relevant academic literature, including systematic reviews (Xanthopoulou & Sahinidis, 2024) and empirical studies based on student interviews (Al-Fattal, 2024). All items were measured using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

The selected barriers reflect five key dimensions that are widely acknowledged in entrepreneurship research: financial, psychological, educational, institutional, and regulatory/market-related constraints.

1. Financial Barriers

"I do not have sufficient funds to start a business"

"It is difficult to access external funding sources"

Financial constraints are consistently cited in the literature as the most prominent barrier to entrepreneurial activity among young people (GEM Reports; Fayolle & Gailly, 2015; Al-Fattal, 2024). Limited access to seed capital or credit is particularly relevant for students who generally lack financial assets or collateral.

2. Psychological and Personal Barriers

"I fear failure"

"I feel uncertain about my business management skills"

"I'm afraid of the stress or anxiety linked to running a business"

These items were included to capture internal barriers that may inhibit students from pursuing entrepreneurship, even when motivation is present. Studies have highlighted how self-doubt, low confidence, and mental health concerns can prevent action (Zhao et al., 2005; Xanthopoulou & Sahinidis, 2024).

3. Educational and Competence-Related Barriers

"I don't feel prepared for entrepreneurship due to lack of knowledge"

"I lack time due to academic obligations"

Many students report that they feel inadequately prepared to start a business due to gaps in their knowledge of finance, law, marketing, or planning. Time constraints, especially among full-time students, also emerged as a practical limitation. These barriers reflect a mismatch between curriculum structure and entrepreneurial readiness.

4. Institutional and Social Support Barriers

"I don't feel supported by my university"

"I don't feel supported by my family or social environment"

Perceived support from key social agents — especially universities and family networks — has been shown to influence entrepreneurial self-efficacy and intention (Liñán et al., 2011). These items were included to assess whether students feel encouraged or discouraged by their environment.

5. Regulatory and Market Barriers

"There are too many legal or regulatory difficulties"

"I perceive the market as overly competitive"

"I am uncertain about whether there is real demand for my idea"

These statements aim to measure students' perceptions of the external business environment. Concerns about bureaucracy, competitive saturation, and market uncertainty often lead to inaction, especially among novice entrepreneurs. Including these barriers helps capture risk perception as a limiting factor.

As reflected in Figure 1 below, respondents were mainly male (60%), while female respondents were 40% (162/110 persons respectively).

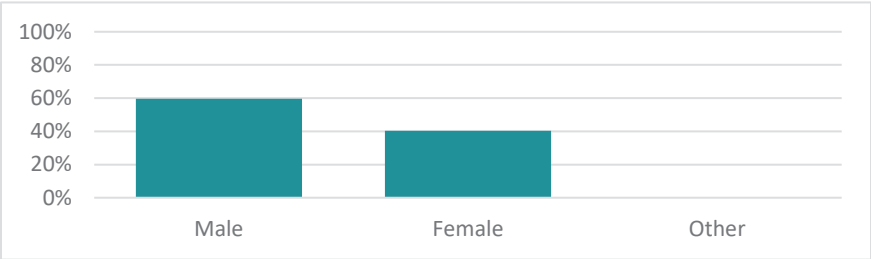


Figure 1. Distribution of Respondents by Gender

Figure 2 indicates the study level of the students: 217 respondents indicated bachelor level, 44 master degree, nine on short cycle, and only two respondents PhD.

The home country of respondents is presented in Figure 3. 82 respondents come from Lithuania, followed by 35 from Uzbekistan and 25 from Spain, while 22 respondents come from Latvia and 8 from

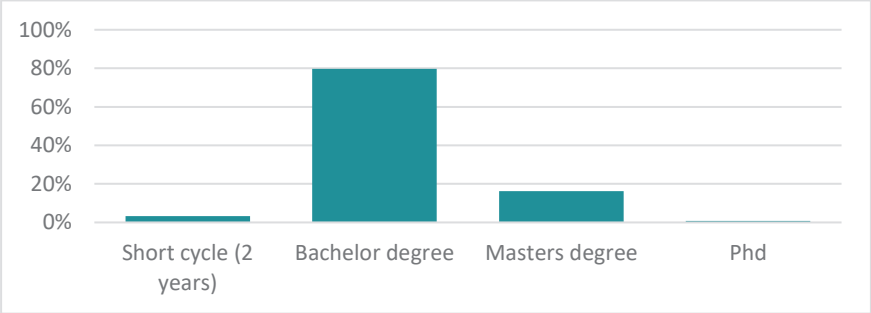


Figure 2. Distribution of Respondents by Study Level

Ukraine. 100 respondents indicated that they come from other countries.

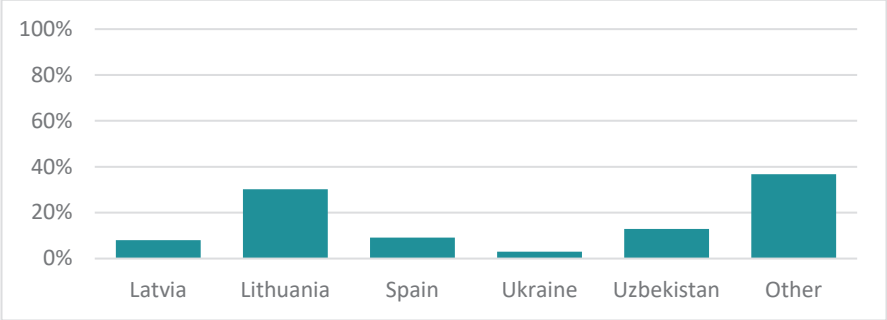


Figure 3. Distribution of the respondents by home country

In Figure 4, the study fields of respondents are presented. Most respondents study management and business (106), while 21 study education sciences, followed by 19 who indicated economics. Engineering sciences and medical sciences are represented similarly, at about 6% each (18:16 respondents).

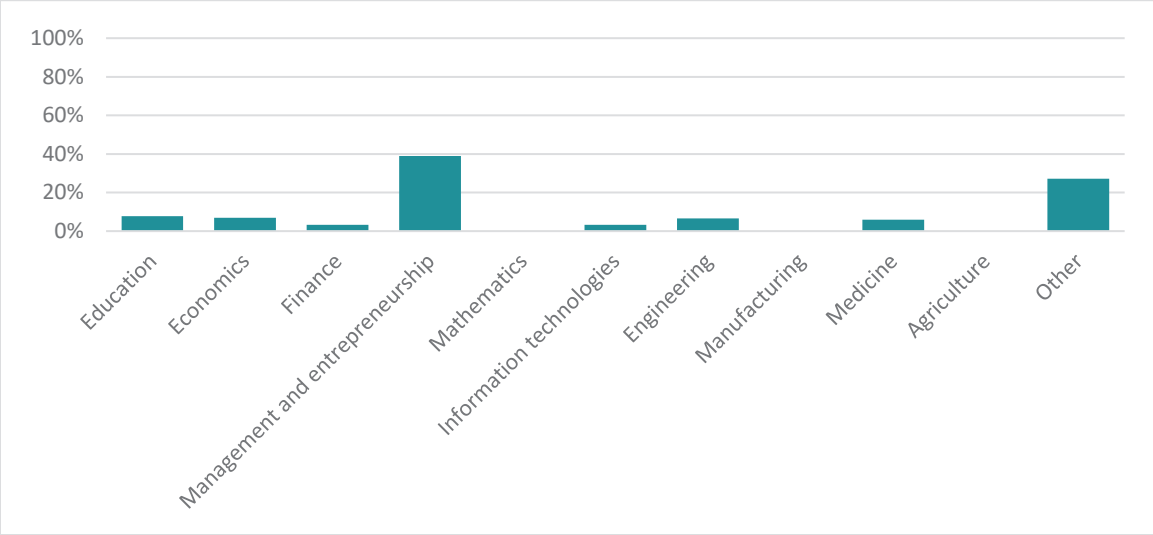


Figure 4. Distribution of respondents per study

Taking into account that data regarding field of study is not well distributed, the authors opted to not test any hypotheses based on this aspect.

Results

To check the internal consistency of the survey, the authors tested it using Cronbach-Alpha. The scale showed high internal reliability - a Cronbach's alpha of 0.922 indicated excellent internal consistency.

The financial barrier is cited as among the most frequent barrier — over 60% of students in qualitative studies perceive funding as the most difficult hurdle (Al-Fattal, 2024). Based on recent scientific findings, the authors developed the following hypothesis:

- H1: Despite many influencing factors and barriers, financing is still the most common barrier.
- H2: Students who obtain a master's degree are evaluating their knowledge to start a new business as much higher than bachelor students, as they are more experienced and skilful.

An analysis of the survey identified 21 potential barriers that students identify before setting up their own business. Students were asked to rate 21 potential barriers starting from 1 (strongly disagree) to 5 (strongly agree). Table 3 displays listed barriers with the percentage of respondents who evaluated as 4 or 5. All barriers are sorted from most common to most uncommon barrier.

Table 2. Key Barriers to Student Entrepreneurship

Lack of startup capital	113	45%
Fear of earning less	104	42%
Difficult to secure funding for new business	102	41%
Highly competitive market	95	38%
Fear of failure prevents	87	35%
Time constraints due to academic commitments	88	35%
Lack of knowledge	86	34%
Afraid of stress, anxiety, etc.	79	32%
Don't feel confident in abilities	78	31%
Legal barriers	77	31%
Uncertainty about demand	76	30%
Lacking technical skills	73	29%
Uncertainty about how to sell	70	28%
No sufficient mentorship	66	26%
Limited access for entrepreneurial networks	65	26%
Preference over immediate job opportunities	64	26%
No confidence in knowledge of risk solving strategies	63	25%
Absence of supportive environment from friends	54	22%
No resources provided by university	52	21%
Insufficient institutional support	50	20%
Absence of supportive environment from family	44	18%

Source: created by authors

The barriers that students most ranked were lack of startup capital, fear of earning less, and difficulties securing funding for the new business (45%, 42% and 41% respectively). The results show that the most influential barriers are linked with money, and lack of support or knowledge. Based on the data, H1 is approved.

To test the second hypothesis, the authors used Kruscal-Wallis non-parametric test. The results indicate that Asymp. Sig. is <0.001, so there is a statistically significant different educational level and readiness to start own business, as master degree students are more ready to establish their own business based on the knowledge they receive in the university and personal/professional experience. In this case, H2 is also approved.

Conclusions

This study investigated the entrepreneurial aspirations of university students and identified the barriers that hinder them from turning their intentions into action. The findings confirm a significant gap between students' strong interest in entrepreneurship, and their actual readiness to start a business.

The research highlights that financial constraints remain the most prominent barrier, with lack of startup capital, fear of earning less, and difficulties in securing external funding rated as the top challenges by respondents. This supports Hypothesis 1, emphasizing that despite increased attention to entrepreneurship education and institutional support, financial issues continue to dominate students' concerns.

Furthermore, the study demonstrates a statistically significant difference between students at different educational levels regarding their perceived readiness for entrepreneurship. Master's degree students reported higher confidence and knowledge to start a business compared to bachelor-level students, validating Hypothesis 2. This suggests that advanced academic experience, combined with greater exposure to professional environments, may foster stronger entrepreneurial self-efficacy.

In addition to financial barriers, psychological and educational challenges, such as fear of failure, lack of confidence, and insufficient practical knowledge, were also identified as major obstacles. Institutional and social support systems (e.g., mentorship, access to entrepreneurial networks, and family encouragement) appeared to play a secondary, though still important, role in influencing students' entrepreneurial plans.

The findings underline the need for holistic and tailored interventions aimed at fostering student entrepreneurship. Universities should not only enhance the quality and accessibility of entrepreneurship education, but also strengthen practical support mechanisms such as startup incubators, mentorship programmes, and partnerships with financial institutions. Addressing students' psychological barriers through coaching and resilience-building initiatives is equally essential.

In conclusion, policymakers and educators must consider developing inclusive strategies to minimize financial and institutional hurdles, enabling a more supportive environment where students can transform their entrepreneurial aspirations into viable business ventures. Future research could explore longitudinal patterns of entrepreneurial activity post-graduation and examine cultural differences across countries to develop more context-specific solutions.

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2.7. COLLABORATION BETWEEN SCIENCE AND BUSINESS IS A PREREQUISITE FOR SUCCESS IN BUILDING A KNOWLEDGE-BASED ECONOMY

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Abstract. *The leading message of the publication is the globalisation processes that modern economies are engaging in in the context of the development of entrepreneurship based on knowledge, on cooperation between science and business and on the rapid implementation of innovations.*
The importance of knowledge, innovation transfer and modern technologies, especially information technology, is increasing along with the transformation processes. The struggle for competitive advantages of enterprises is characterised by innovative technologies applied in production processes, and modern approaches in the organisation of production. The R&D sector, to build competitive advantages, must base its activity on appropriate material and financial resources and have at its disposal appropriate intellectual capital capable of conducting active pro-innovative activity.
Cooperation between science and business is one of the processes that should be visible in the activities of every enterprise building its potential based on knowledge and research and development activities. Poland's membership of the European Union provides several opportunities to promote cooperation between science and business, e.g. in scientific and research projects. The content of this publication shows the strengths and weaknesses of these processes but also points to opportunities and threats. The publication points to yet another aspect of cooperation between science and business, namely organisational innovations such as the creation of scientific and industrial consortia and processes of commercialisation and internationalisation of economic activity.

Keywords: *research and development activities, innovations, commercialization, intellectual capital, European funds.*

Introduction

Globalization processes in the modern economy require enterprises, regions, and individual countries to build a strong competitive advantage, which is facilitated by the efficient and rapid implementation of innovations.

The importance of knowledge, intellectual property, and modern technologies, especially IT, is growing in business operations. Innovative technologies characterizing modern products, modern technologies used in manufacturing processes, and modern approaches to production organization are characteristic of today's fiercely competitive environment. To build a competitive advantage, enterprises must continue to possess adequate material and financial resources, intellectual capital, and innovative potential, but above all, they must conduct active pro-innovation activities aimed at creating and effectively commercializing innovations.

One of the processes that should be visible in every enterprise's operation is the collaboration between science and business in research and development. Since Poland's accession to the European Union, several instruments have been introduced aimed at increasing cooperation between business and science in the R&D sphere. The question is whether these goals are well-defined. In the previous European Union financial framework, structural funds were more focused on supporting the science sector in the areas of research, research infrastructure, and technology transfer processes. In the current timeframe of 2021–2027, most funds allocated for research and development will be directed to enterprises and business support organizations, an example being the "Smart Path."

The internationalization of economic activity plays a crucial role in the commercialization process, characterized by, among other things, rapid technological progress, the intensive spread of innovation, and high capital mobility.

Scientific and Research Collaboration as a Condition for Increasing Enterprise Competitiveness

The Polish economy today faces the challenge of transitioning from competing primarily on cost to a model of creating higher added value, based, among other things, on innovation and the transfer of knowledge and technology. Such processes will not be possible without effective collaboration between science and business within R&D, the most important challenge of which is the creation of partnerships and cross-sectoral collaboration. This is exemplified by the collaboration between business and universities, which takes various forms, tailored to the needs and capabilities of both groups of beneficiaries.

Research and development activities are key components in creating not only competitiveness but also innovation. Both forms of activity are crucial for long-term growth and the ability to maintain a leading position. Investments in R&D allow companies to develop products and services and optimize current manufacturing processes. Furthermore, this allows companies to respond more quickly to market changes, meet customer expectations, and build a competitive advantage. Organizational change management is becoming a priority.

All market participants benefit from R&D collaboration. On the one hand, companies gain access to specialists who, based on their scientific interests, can design processes and solve problems faced by the former. This transaction is associated with cost reductions (especially since it often requires access to highly specialized equipment). On the other hand, universities, which can thus commercialize the research results of their employees, conduct research collaboratively with practitioners, and ultimately enhance their curricula with elements expected in the job market. This latter approach, in turn, brings tangible benefits to students, who will find it easier to find their place in the workforce after graduation. However, it should be noted that a dual education system does not deliver the expected results.

A company operates in a specific market and must take its characteristics into account in its operations. In a market economy, and in line with European Union standards, there is a need to enhance knowledge and business management skills in a competitive environment. Globalization, on the other hand, makes international collaboration attractive, full of new challenges and expected financial results. The discussion presents new directions for cooperation in the field of knowledge acquisition and innovation. In practice, cooperation is considered that is focused on increasing the intellectual potential of the enterprise. Cooperation in the field of innovation involves active participation in joint innovation projects with other beneficiaries. These may be other enterprises or business environment institutions. Cooperation in the field of R&D allows enterprises to access Knowledge and technology that would be impossible to utilize on their own. Collaboration also offers significant potential for synergy, as partners learn from each other. Increasing competitiveness and innovation of the economy impacts, among other things, the technological level, which, as is commonly believed, can be achieved by increasing expenditure on research and development and innovation. In this context, recognizing the superiority of intellectual capital over physical capital, it is appropriate to advance the thesis that, primarily due to the significant role knowledge plays in the innovation process, it can be said to be its driving force. Knowledge not only creates innovation but also has a leading influence on management processes within an organization. Therefore, the prerequisite for innovation is organizational innovation, the ability to create knowledge that can and should be managed. This concept is gaining importance; it is being called a knowledge management method and complements the traditional management model. As is well known, the main entities that play a leading role in an innovative economy are enterprises. Some enterprises and institutions demonstrate innovation by conducting innovative activities. Therefore, there is no simple relationship between R&D expenditures and innovation activity. This makes establishing a bridge between science and business even more valuable. A separate issue is the ability to manage innovation activities within a company, as not all entrepreneurs are capable of doing so due to the lack of a culture of innovation within the organization.

A prerequisite for realizing the idea of a knowledge-based society is giving appropriate importance to the universally recommended concept of lifelong learning within continuing education, which is a fundamental element of the so-called European higher education space. In Europe, built on a knowledge-based society and economy, lifelong learning strategies will have to meet the challenge of competitiveness and the use of the latest technologies to enhance social cohesion, equal opportunities, and quality of life.

Scientific and research activities in Poland in statistical terms

The development of the economy and economic entities is strongly conditioned by the level of outlays on research and development activity. Poland is gradually catching up with European countries in terms of the level of R&D expenditures. On the other hand, there is still no shortage of barriers limiting innovation and building a knowledge-based economy. The basic source of funding for R&D is the own funds of enterprises, used by as many as 98% of companies conducting or commissioning research and development projects. The majority of medium and large enterprises that conduct or commission R&D allocate between 1 and 5% of their revenues to this activity. The second most used source of funding is public aid - used by 48% of companies engaging in R&D. Companies mainly receive grants for investments financed by the European Union Structural Funds and for R&D activities. Loans and equipment leasing are also used relatively often to finance R&D (investment part) .

In Poland, the R&D sector is constantly growing. According to the Central Statistical Office (GUS) report "Research and Development Activity in Poland in 2022," gross expenditure on research and development activities is steadily increasing. Gross domestic expenditure on R&D (GERD) in 2022 amounted to PLN 44.7 billion, an increase of 18.6% compared to the previous year. The R&D intensity index, representing the share of domestic expenditure on R&D in GDP, was 1.46% (compared to 1.43% in 2021). Gross domestic expenditure on R&D per capita was

PLN 1,182, an increase of 19.2% compared to the previous year. The number of entities involved in R&D activities increased by 0.8% compared to the previous year.

In 2022, current expenditures continued to dominate the structure of internal R&D expenditures by cost type. They accounted for 85.1% of all domestic expenditure incurred on research and development projects.

Table 2.4.1. Selected R&D activity data

Specification	2015	2016	2017	2018	2019	2020	2021	2022
Number of entities in R&D activities	4 427	4 871	5 102	5 779	5 863	6 381	7 370	7 431
Gross domestic expenditure on R&D activity (GERD) in million PLN	18 061	17 943	20 578	25 648	30 285	32 402	37 676	44 702
Gross domestic expenditure on R&D (GERD) to GDP ratio in %.	1,00	0,97a	1,04a	1,21	1,32	1,39	1,43a	1,46

a Data revised from previously published due to revision of GDP.
Source: Own elaboration based on CSO data.

Scientific Staff in R&D Activities

Scientists play a crucial role in a company's innovative activities. Due to their knowledge, skills, and competencies, they often become team leaders in research and development projects.

Scientists engaging in research and development activities contribute

- initiative and ideas.
- new knowledge and new technologies.
- preparation of human capital.
- creative environment.
- laboratories and research infrastructure.

In contrast, they expect commercialisation of research results, commissions for services and expertise, funding for research, and employment of graduates.

In 2022, the scientific staff engaged in R&D activities amounted to 321.4 thousand people, 5.2% more than in the previous year. The actual involvement of these people in R&D projects expressed in full-time equivalents amounted to 195.1 thousand FTEs, up 5.3% year-on-year. The structure of the research staff in R&D was dominated by in-house staff, accounting for 81.8% of staff in R&D measured in persons, and 84.1% - in FTEs (in 2021, these shares were 81.5% and 83.7% respectively).

In 2022, the structure of people involved in R&D by function performed was invariably dominated by research staff, who accounted for 69.3% and 71.2% of internal and external research staff in R&D expressed in persons, respectively (compared with 70.0% and 73.1% in 2021). In full-time equivalents, these shares were 72.5% and 71.7% respectively (against 72.7% and 75.8% in 2021).

In 2022, the structure of internal scientific staff in R&D by executive sector was dominated by those working on R&D activities in the business and higher education sectors. The in-house scientific staff of these sectors accounted for 57.1% and 40.3% of the total number of in-house scientific staff involved in R&D, respectively. In the business sector, the number of internal scientific staff in R&D increased by 9.0% compared to the previous year, while in the higher education sector it increased by 2.0%. The highest FTE was recorded in the business sector (101.6 thousand FTEs), which increased by 8.9% from 2021.

Table 2.4.2. Research staff in R&D by level of education and main groups

Specification a – 2021 b – 2022		Total	With higher education			other	Persons with other education
			with a professorial title	with a degree			
				D. habilitation	Dr.		
		in persons					
Total	a	305 563	14 645	25 619	51 980	175 659	37 660
	b	321 391	14 760	25 989	53 872	189 237	37 533
Staff internal	a	249 014	11 333	22 761	47 307	139 139	28 474
	b	263 057	11 248	22 859	48 932	149 870	30 148
Staff external	a	56 549	3 312	2 858	4 673	36 520	9 186
	b	58 334	3 512	3 130	4 940	39 367	7 385

Source: Own elaboration based on CSO data.

The structure of both internal and external research staff by level of education was dominated by people with other tertiary education, who accounted for 57.0% and 67.5% of people in the respective group of staff in R&D, respectively. At least a doctoral degree was held by 31.6% of internal staff, while for external staff the proportion was 19.9% .

Scientific and Industrial Consortia as an innovative form of cooperation between science and business

Building a knowledge-based economy increasingly emphasises cooperation between science and industry, understood as large corporations, small and medium-sized enterprises, organisations providing all kinds of services and business environment institutions. This applies to both the public and private sectors. The process of creating consortia is local, national and international in scope. A consortium is a relationship of a transitional nature, geared to the achievement of an agreed goal, sharing risks and responsibilities.

The purpose of a consortium is to create, develop and implement new technologies or services and to carry out infrastructure projects with significant potential. There are some investments that are too large to be carried out by a single entity, then investors may decide to cooperate by committing to fulfilling an agreed task together as part of a consortium. This is realised in the form of joint projects financed from their own resources or from public funds in the form of grants and subsidies co-financed by the European Union Structural Funds.

In addition, there is a separate but very interesting group of consortia in business, namely scientific and industrial consortia, consisting of scientific entities and entrepreneurs, whose joint venture involves specific scientific research, or development works with a view to their use in the economy, namely, to reach the stage of commercialisation. In these consortia, therefore, there is a change of beneficiaries in relation to an ordinary consortium, where this form of cooperation consists exclusively of entrepreneurs. The idea of cooperation between the science and business sector is associated with joint conduct of research and development (R&D) works and creation of innovative technological solutions in production and services. However, such an approach is rather narrow. A deeper look at the areas of such cooperation reveals many other dimensions in which participation benefits not only businesses and universities, but also students in various fields of study.

Another difference in a scientific and industrial consortium is the duality of the purpose of concluding such an agreement - apart from the economic purpose, which is the most important for the entrepreneurs concluding it, there is always a certain scientific purpose, undoubtedly the most important for the scientific entities participating in a given consortium. The important role of this type of consortia manifests itself, on the one hand, in ensuring the possibility of financing works on the development of modern technological solutions which can then be commercialised and applied in business, and on the other - in direct access of interested entrepreneurs to the latest scientific achievements and opportunities for their economic use.

Scientific-industrial consortia are an effective way of verifying the proper allocation of R&D resources. Industrial partners, by investing their own resources and bearing the business risk, are able to determine well, quickly, cheaply and relatively objectively the future benefits of implementing the results of specific scientific research. They perform this task more efficiently than scientific organisational structures (think-tanks) that make arbitrary decisions about the usefulness of certain solutions without links to the economy, industry and the market. In this type of organisation, there is a confrontation between theory and practice which should result in a successful process of entering commercial markets.

Research aspects

The main goal of entrepreneurs is to increase the attractiveness of the products and services they offer. These activities are carried out primarily through the implementation of innovation and knowledge and technology transfer. The objectives of entrepreneurs generate new tasks, research and development oriented towards the implementation of research results. Research is a task for scientific units, which, as mentioned, have knowledge and experience in this field. The formation of consortia is therefore associated with the possibility of large-scale commercialisation of research conducted in a scientific unit and, at the same time, makes it possible to raise funds for statutory activities, in this case, for those related to the purpose of forming a consortium. An advantage of consortia, from the point of view of a scientific unit, is also the possibility to participate in a larger number of projects significantly expanding the area of impact of science on the economy. Research and development grants are intended as a means of improving the innovation and competitiveness of the country's economy. These funds usually also provide an incentive to form consortia.

Projects co-financed by the European Union's Structural Funds decisively increase the profitability of cooperation between science and business.

Educational aspects

The implementation of the project of the scientific-industrial consortium undeniably influences the increase of the scientific and didactic potential of the university. The participation of academic teachers in R&D work improves their competence in a given field, which influences the quality of their teaching. This potential should be used in an appropriate manner, as it constitutes an opportunity for dynamic development of HEIs and, at the same time, may allow for limiting the problems and barriers currently faced by all higher education institutions in Poland. The development of teaching staff through participation in industrial placements makes it possible to update practical skills and professional experience that are useful in research and teaching, in conjunction with the use of available infrastructure. Close cooperation between the university and business representatives also makes it possible to identify the demands and expectations of specialists in given fields. This leads to the creation of new specialisations in existing fields of study or new fields of study.

Conclusion

Scientific-industrial consortia have their strengths and weaknesses. If the strengths have been sufficiently presented in this article, it is necessary to conclude by focusing on the weaknesses, which primarily include legal issues concerning the rights and obligations of consortium members. Another of the most common topics is intellectual property and the division of rights to it. When consortia are formed only for the purpose of implementing R&D projects, sometimes the requirements for the division of intellectual property rights are included in the regulations of a given competition to which beneficiaries apply. Valuation of intellectual property can also be a difficulty.

As is well known, the basis for a consortium is the consortium agreement. The formation of such a broad agreement can be very time-consuming even when dealing with professionals. Negotiating the terms of cooperation between the partners, and in fact between the lawyers of both parties, can be complex. In turn, without a formalised consortium agreement, it is not possible to apply for co-financing of the project from European funds, so the matter becomes more complicated. If one is planning to apply for EU funding as a consortium, time should be planned for the formation of the consortium agreement. It should be remembered that the deadlines for applying for EU funds are strict deadlines.

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Mechanisms of Resilience in Uncertain Times:

Crisis Management, Social Entrepreneurship, and Human Capital Development

Collective monograph

Layout: MB „Arhela“
Edited by UAB „Skrivanek“

Publisher Mykolas Romeris University Ateities 20, Vilnius
www.mruni.eu