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APPLICATION OF CUSTOMISATION AND PERSONALISATION IN DIGITAL SOLUTIONS OF THE NON-LIFE INSURANCE MARKET: A CASE STUDY OF LITHUANIAN, LATVIAN AND ESTONIAN E-SALES PLATFORMS

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ABSTRACT

The Baltic non-life insurance market has not only continued recording a dynamic premium growth in the past three years but also has shown a significant transition to digital technologies and solutions. Here, the development of customised insurance products and systems, assessment of claims, and creation of personalised customer experience can be considered best practices in the application of theoretical concepts and, accordingly, require continuous studies from a scientific point of view. Therefore, the following research aims to present an as-is status of existing solutions of digital insurance platforms in Baltic countries and to clarify their compatibility with customisation, personalisation, and value co-creation features at the practical product and functional levels. Accordingly, a case-study method following a combination of a descriptive embedded single-case design and the state-of-the-art method was applied in the analysis of the non-life insurance market, its e-channel environment, and platforms of three Baltic countries — Lithuania, Latvia, and Estonia. The multidimensional assessment matrix has been designed to present the results of the case study analysis on the practical product and functional levels. Research results refer to an assumption that ideas and methods of Mass Customisation and Mass Personalisation concepts, as well as their combination with digital solutions, penetrate the analysed part of the non-life insurance market in the Baltic countries and result in a mutually useful outcome for insurance companies and end-users. The paper contributes to further theoretical investigation of digitalisation and digital transformation of the non-life insurance market in the Baltic countries, as well as the development of practical knowledge in combined management and IT solutions application.

KEY WORDS

mass customisation, mass personalisation, digitalisation, co-creation, Baltic insurance market

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INTRODUCTION

The global insurance market, especially a part of non-life insurance, has shown remarkable growth in numbers of direct premiums written in the past three years and since 2008. E.g., the year 2018 was marked

by a premium raise of 1.5% and bypassing a new benchmark of USD 5 trillion (Swiss Re Institute, 2019; Insurance Information Institute, 2019). This positive trend is expected to persist until 2021, and the emerging markets in the Asia-Pacific region should continue

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to rise and stay the main insurance drivers of the insurance market of the whole world within this decade (Swiss Re Institute, 2019). Baltic insurance markets have also shown a substantial development and a positive volume of gross written insurance premiums (GWP) in the last three years with a high record in 2018 in all region countries:

1. Lithuania led among the Baltic States and reached EUR 102.8 million of GWP;
2. Latvia reached EUR 78.8 million of GWP;
3. Estonia reached EUR 25.6 million of GWP (The Baltic Times, 2019).

An overall yearly increase in these markets was about 14% in the non-life and health insurance segments and was driven by following combined circumstances as dynamic price corrections in motor insurance lines, an active consolidation of market players lead by Vienna Insurance Group AG both at the local and regional level, refurbishing brand identity, the optimisation of the sales network, digitalisation and growth of Baltic economies (BTA Baltic Insurance Company AAS, 2018, 2019). On the other hand, insurance companies have been strongly affected by external factors, such as process automation, e-commerce, and customer behavioural changes in the financial sector; therefore, they gradually integrated online services and e-sales platforms into their business models and strategies (Küster et al., 2016). Furthermore, a digitalisation strategy and the development of specific online services in the financial sector are recognised as mutually beneficial. Additional features of quality and flexibility in services and products can be provided for end-users, and a new model of customer loyalty and e-satisfaction can be created via mass personalisation and customisation features instead of maintaining a narrow focus on price knowledge and expectation management within organisations (Küster et al., 2016). Otherwise, the high usability of e-services and its rapid increase has become a new standard of the banking service, but it still possesses a pre-stage in the insurance market. Here, a strong focus on digitisation and digitalisation at a strategic management level of insurance companies are well recognised but seem to be insufficiently aligned and, therefore, might have a negative impact by leaving best practices of co-creation, personalisation, and customisation, and a customer involvement aside. Accordingly, the following questions were investigated in this particular research:

1. What is a practical as-is status of applying digital solutions, customisation, and personalisation features in the Baltic non-life insurance market?

2. Which type of online customisation frameworks are applied in the Baltic non-life insurance e-sales platforms?
3. How a spread of digitalisation and online customisation frameworks influences behavioural patterns of insurance end-users?

The following research aims to investigate the practical widespread of digital non-life insurance platforms in the Baltic region and clarify their compatibility with modern and combined online customisation frameworks.

1. LITERATURE REVIEW

An intensive and multidimensional digital transformation or transition is widespread in public and private sector organisations worldwide, including the insurance market. Furthermore, a proliferation of customised and personalised digital solutions together with the Internet of Things (IoT) and Big Data Analytics (BDA) have enabled new decision making in businesses in terms of Customer Relationship Management (CRM), marketing, and sales strategies (Dimitris et al., 2018; Anshari et al., 2019; Khanboubi et al., 2019; Chromčáková, Starzychná, & Stoklasa, 2017). Moreover, aiming to adapt and integrate Big Data application and the information generated from BDA, social media, and IoT platforms, financial companies have exploited and continued to invest heavily into new technologies as well as designed new e-business models (Dimitris et al., 2018; Khanboubi et al., 2019; Lezgovko & Lastauskas, 2019). These models now mainly support a high personalisation and customisation of operations in sales and daily back-office service as well as in their optimisation. However, the prevailing scientific studies within the digital insurance field illustrate dynamic changes in research directions, periods, and different positions towards semantical interpretations. Here, key differences can be identified in the research period during the decades 2000–2010 and 2010–2020. In the first period, researchers mostly focused on the technological application by investigating the influence and widespread of digital innovations in primary insurance activities of product underwriting, sales operations, and legal domains. Key research domains during this period were: product differentiation and presentation through electronic (online) distribution channels; emerging technology application in insurance distribution channels; new electronic insurance distribution channels and online platforms influence on internal insurance sales agent

network and external end-user experience; legal regulation and protection of end-users in electronic insurance distribution channels, platforms, and online sales process; compatibility and transition from non-agile legacy data processing systems and infrastructure to new generations of digital technologies, systems, and infrastructure (Stoeckli et al., 2018; Bohnert et al., 2019; Raudeliūnienė & Račinskaja, 2014).

In the past decade, researchers mostly focused on more combined analysis of digital insurance outcomes at the operational and strategical level in insurance organisations and overall insurance networks. Key research areas were: the development and deployment of multi-channel or multi-access technical solutions and their integration to the omnichannel-based insurance business model; a change of organisational mindset in insurance organisations and overall cultural barriers for a digital transformation in the insurance industry; a transition to a platform-based interaction and systemic value creation; the development of new personalised, situation-based mass insurance products like insurance of cyber risks or sachet insurances (bite-sized insurances) products as pets or cyclist insurance; a focus on a new mass customer base, which is strongly influenced by a growing millennial and z cohort, shared economy principles, and demand-driven insurance needs; Usage-Based Insurance (UBI) and On-Demand Insurance (ODI) based on improvements in risk and capital management as well as underwriting of automatic algorithmic decision-making processes; ensuring personal data protection and full access to it as well as reducing a negative influence on an end-user from information asymmetry situations or extreme forms of dynamic pricing (Wiesböck et al., 2017; Bohnert et al., 2019; Łyskawa et al., 2019; Baumann, 2020; El Arif, 2020; Baranauskas and Raišienė, 2021). To be more specific, this particular research contributes to the following scientific studies of insurance digitalisation. Some researchers, like Wiesböck et al. (2017), Klapkiv et al. (2018), Zarina (2019), and Shubenko (2020), conducted case studies within boundaries of specific insurance value chain parts, i.e., strategical management, claims management, sales distribution, product digitisation, also limited by the origin country or region. Bohnert et al. (2019), Łyskawa et al. (2019), and El Arif (2020) selected a more comprehensive and holistic approach by evaluating digital agendas, their implementation, and development. Moreover, investments from organisations in digital insurance enablers and possibilities of online distribution in Europe were also analysed by the mentioned authors. The global

relevance of the topic is confirmed by the research efforts of Nguyen (2019) and Niraula and Kautish (2019) on Vietnam and Nepal cases. Zolnowski and Warg (2017), Stoeckli et al. (2018), and Warg (2019) have contributed to the field by multidimensional investigations, which present the status of digital intermediaries, Insurtech and their influence on the insurance industry as well as the shift from standardisation and product-based business model. Another group of scientists, like Lyubov (2018), Kaigorodova et al. (2018), Albrecher et al. (2019), and Baumann (2020), focused on literature reviews and case studies by using a technological point of view and revealed key directions, challenges, and impact of digital technologies and data science application in insurance processes and services. A significant contribution was also made by Eling and Lehmann (2018), Mitrovic et al. (2019), and Weingarth et al. (2019), who conducted case studies of digital transformation frameworks, strategies, and process steps from both a holistic point of view in the insurance industry and a value chain, and an empirical evidence point of view.

In general, the increase of practical and academic attention to the sustainable development of new fully digital, bespoke, and customised products or services plays a key role in the modern versions of Mass Customisation and Mass Personalisation concepts and overall e-business strategies as well. (Medini et al., 2015; Hora et al., 2016; Dissanayake, 2019). Mass Customisation and Mass Personalisation as separate research domains in a business organisation of the manufacturing field have received considerable attention as they have been thoroughly reviewed in many contexts in the last three decades. During the last decade, these concepts have been shifting theoretical boundaries and orientation to the stand-alone version of the E-Mass Customisation and Personalisation concept (e-MCP), which focuses on combined management and IT method application, end-user experience (UX), and interface (UI) management, and the overall digitalisation domain (Anišić et al., 2013; Kanama, 2018; Zhang et al., 2019). Moreover, in organisational practice, a rapid orientation towards the customer-centric approach, external demand-driven supply, and value creation via online platforms or process automation tools undoubtedly influences the content and development of these two concepts (Hu, 2013; Walczak, 2014; Tiuhonen & Felfernig, 2017). Historically, these practical outcomes also reflect a transformation of the late 2000s from the traditional version concept to the electronic Mass Customisation and Mass Personalisation concepts,

which were driven by customer demand (Baranauskas et al., 2020). During this period, the Mass Customisation concept became a more interdisciplinary research field by including features of process management, marketing, engineering, information technology, and other related scientific domains. In the recent decade, the rise of the combined electronic Mass Customisation and Personalisation (e-MCP) concepts has been identified, which is driven not only by customer demand but also by big data and big data analytics (Pollard et al., 2016; Xu et al., 2016; Zhang et al., 2019; Baranauskas et al., 2020).

2. RESEARCH METHODS

The following research of Lithuanian, Latvian, and Estonian digital non-life insurance platforms aims to present an as-is status of existing digital solutions and clarify their compatibility with customisation, personalisation, and value co-creation features at the practical product and functional levels. Accordingly, a case-study method (following a combination of a descriptive embedded single-case design) and the state-of-the-art method were applied to analyse the digital insurance spread in the selected region within a specific period and market segment. From the point of view of the research process, both methods were used independently with an unbiased application and from the point of view of research design, the research is qualitative.

The state-of-the-art method provides a comprehensive as-is status of digitalisation and online customisation frameworks that influence behavioural patterns of insurance end-users. Here, a multilevel analysis was made into practical data sources from overview reports of the Global Insurance Markets Trends made by the Organisation for Economic Co-operation and Development (OECD) for 2017 and 2018, as well as sources and tools of Google Trends and Google Keyword Planner for the period from 1 January 2017 to 1 January 2020. The practical as-is status of digital insurance trends and end-user behaviour was identified by applying Google Keyword Planner and Google Trends tools. The functionality of Google Keyword Planner is a part of a free Google Ads application, which is well-recognised keyword research and evaluation tool deployed in practice to build targeted digital marketing campaigns based on volumes and content of data searched digitally by web users (Google Ads, 2020; Google Ads Help, 2020). Nevertheless, Google Trends is also defined as a simi-

lar free online tool to present dynamics of a particular search term or phrase in the Google search engine for a selected period (Google Support, 2020b; WordStream, 2020). In general, both tools are related to search engine optimisation (SEO) via digital marketing methods, but they also have a significant difference in statistical data counting logic and possible later usability. The main difference here is that Google Trends focuses on providing relative search volume data compared to all search volumes in the Google search engine while the Google Keyword Planner tool only estimates detail specific keyword search volume data in an inserted date and location range (Google Support, 2020c). Accordingly, both tools in this research have been used in the form of statistical mapping of selected keywords. Moreover, the tools have been accepted as suitable and sufficient to visualise yearly dynamics and define customer behaviour trends in the context of the research subject.

3. RESEARCH RESULTS

3.1. STATE-OF-THE-ART OF THE BALTIC NON-LIFE INSURANCE MARKET AND DIGITAL TRENDS IN 2017–2020

The advent of the 4th Industrial Revolution stands not only for new cyber-physical systems, practical convergence of artificial intelligence solutions, IoT, and cloud computing, but also for a new data-driven and combined business management models, network, and ecosystems (Hu, 2013; Ogorean, 2018; Orenge-Roglá & Chalmeta, 2019). In the case of the insurance market and organisations, past years mark a continuous adaptation of technological innovations, and the shifted orientation to user-driven product customisation and personalised service, indicators of customer satisfaction, and experience management via e-service and sales platforms. On the other hand, general concerns exist that insurance organisations have not yet reached the target maturity level, so they could not fully and easily integrate new technological innovations and results of BDA into their daily processes, products, or service management systems. Moreover, additional obstacles are identified: insurance organisations still appear to remain at a transition stage in customisation and personalisation processes compared to, e.g., the banking industry. Besides, insurance organisations now focus more on the identification and definition of heterogeneous data sources, evaluate the need for a technological, legal,

and management base and competencies update, preparation for possible structural and process changes (Chen et al., 2015). The background of the insurance requires accurate knowledge and data-based decisions and conceptual models; therefore, a predominant feature of products or services is standardisation (Koutsomitropoulos & Kalou, 2017). Therefore, following the multidimensional assessment analysis of Lithuanian, Latvian, and Estonian non-life insurance, e-sales platforms not only present the status of customisation and personalisation in the context of digital solutions but also reveal a preparation of insurance organisations to work with a new approach to Customer Relationship Management, data analytics and technological innovations inclusion into daily operations.

In the case of the non-life insurance market in Lithuania, Latvia, and Estonia, combinations of customisation, personalisation, and digital solutions can also be defined as important prerequisites to attain an additional competitive advantage and a better cost optimisation level in the long term. On the other hand, practical implications in the insurance market illustrate an existence of a narrow and concentrated purpose to ensure a numerous variety of products and/or customisation options without proper access to information or proper assistance in the customisation process. In theory, this situation is known as Mass Confusion and stands for consequences where customers are overwhelmed with processes, products, or service data, which later leads to user dissatisfaction as well as a decrease in demand for customised products or services, customer loyalty and branding (Huffman & Kahn 1998; Piller et al., 2005; Trentin et al., 2013).

First, indicators from OECD annual reports of 2017 and 2018 are taken for evaluation of the Baltic non-life insurance market development. The main data are summarised in Table 1 as per below.

Statistical data provided in Table 1 confirms dynamic and positive development trends in all Baltic insurance market as it is influenced by intense competition in the segment of motor insurance and

a strong regional consolidation and synergy actions performed by Vienna Insurance Group AG and Austrian-based insurance broker group GrECo (IIZI, 2019; BTA Baltic Insurance Company AAS, 2018, 2019). Besides, increased accessibility of service via digital self-service platforms has also impacted the Baltic market significantly. Overall, the year 2017 marked the largest increase in gross written insurance premiums in all three countries, while in 2018, only Estonia was identified to hold a positive yearly turnaround in premiums. Furthermore, one of the indirect reasons for this positive trend can be identified as a persistently low-interest-rate environment that had a notorious impact on to results of regional life insurance companies within the same period. To compare on a global scale, in real terms, gross premiums increased by 3.5% and had a positive turnaround in overall 27 out of 50 OECD report countries in 2018 (OECD, 2019). According to analysts, several main reasons influenced the high revenue numbers in the Baltics:

- successful implementation of an increase in tariffs in the segment of motor vehicle insurance;
- growth in the amount of motor vehicle short- and long-term insurance policies due to an increase in the sale of new vehicles;
- a favourable macro-economic environment.

Otherwise, trends in claims payments in 2017–2018 are different in the Baltic countries and correlate to global up-down tendencies. I.e., in the year 2018, an annual real growth rate of gross claims payments rose in 26 and fell in 20 countries from the OECD report.

Second, it also should be noticed that due to different online insurance penetration levels and behavioural patterns of digital users in the Baltic non-life insurance market, both multichannel and omnichannel strategies and tools are widespread and vitally used in their e-channel environments and platforms. Therefore, new e-business models in the insurance sector have a primary focus on sales support and, then, on customer integration and co-creation pro-

Tab. 1. Country-level evaluation of non-life insurance market indicators

COUNTRY / YEAR	THE ANNUAL GROWTH RATE OF DIRECT GROSS PREMIUMS		ANNUAL REAL GROWTH RATES OF GROSS CLAIMS PAYMENTS	
	2017	2018	2017	2018
Lithuania	16.6%	10.1%	29.8%	-0.9%
Latvia	20.0%	18.9%	7.9%	13.4%
Estonia	11.7%	12.4%	4.0%	17.4%

*OECD provides only a mid-year report for 2019; therefore, data for analyses were not included.

Source: elaborated by the author based on OECD reports of 2017 and 2018.

cesses (Dimitris et al., 2018). These trends reflect end-user behaviour and can be illustrated by predominant search keywords, which are presented in Table 2. Accordingly, the main criteria which were applied in term analyses are defined as follow:

1. A search volume index was more than 0 and reached a required minimum of 1000 searches to get 1 point in the index;
2. Interest by a geographical location is limited to one for each country: Lithuania, Latvia, and Estonia;
3. Data exploration is carried out by using a search term, not a search topic. This logic was followed because the topic includes all related search terms while a search term is specific and results only show a relative volume of the term (Google Support, 2020a);
4. Used search indicators: custom time range (1 January 2017 – 1 January 2020); all categories; web search.

It should be emphasised that short-tail keywords analysed in the context of the Baltic insurance market not only strongly deviate in a scope number when comparing each the countries but also illustrate a different digital branding situation. To specify, in the case of Lithuania, within the most popular search terms (by search volume), only one term has a relationship to a brand of a specific insurance company. Compared to the case of Latvia under the same evaluation conditions, brands of three companies can be found and based on extracted data; the highest-ranking was Swedbank, one of the leading banks in the Baltic region. However, the strongest relationship to brand representation was identified in the case of Estonia, where the six most popular search terms had a relationship to a specific insurance company, bank, or insurance broker company. According to the listed indicators, the following terms, by taking an equivalent of each term in Lithuanian, Latvian and Estonian languages, were checked using the Google Trends

Tab. 2. Evaluation of insurance search terms popularity in the Baltic countries (1 January 2017 – 1 January 2020)

SEARCH TERM	INDICATORS					
	Lithuania		Latvia		Estonia	
	Competition rate*	Avg. searches**	Competition rate*	Avg. searches**	Competition rate*	Avg. searches**
insurance	69	16,570.00	83	3,535.00	74	3,472.00
online insurance	77	11,060.00	-	-	71	89
insurance calculator	44	4,735.00	70	172	62	752
car/MTPL insurance	81	7,581.00	84	1,418.00	91	9,503.00
car insurance online	82	1,503.00	-	-	43	12

*Indexed value. It shows how competitive ad placement is for a specific keyword in the selected location, time, and Search Network targeting options. The level of competition is from 0 to 100.

**Per month. The average number of times people have searched for a keyword and its close variants based on the month range, location, and selected Search Network settings.

Source: elaborated by the author based on the use of keywords planning the functionality of Google AdWords tool.

Tab. 3. Search volume index of research keywords in the Google Keyword Planner tool

RESEARCH KEYWORDS	COUNTRY AND SEARCH PERIODS								
	Lithuania			Latvia			Estonia		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
insurance	78.23	78.21	80.54	72.75	72.35	70.83	63.28	62.63	71.65
insurance calculator	35.19	33.33	26.27	18.32	16.12	17.17	17	21.11	17.34
car/MTPL insurance	61.85	57.98	54.38	40.60	34.40	32	59.60	57.77	47.17

Source: elaborated by the author based on using the keywords planning functionality of Google AdWords tool.

tool: insurance, insurance calculator, car/MTPL insurance. A selection of the listed terms was made by following the criterion that all three terms had a high-level recognition among web end-users from January 2017 to January 2020. A structured summary of search volumes for the selected terms is provided in Table 3.

The results in Table 3 indicate several trends of digital insurance solutions in all three Baltic countries. First, in Lithuania and Estonia, the last three years resulted in a steadily increased rate of end-user interest in web searches by using a stand-alone search keyword insurance: the search volume index grew by two points in Lithuania, while in Estonia, the search index grew significantly, by 8.47 points. Moreover, the term insurance was in the Top 3 of all insurance-related short- and long-tail keywords in all three countries within the analysed period. On the other hand, a combined general keyword insurance calculator, which by its meaning is the closest to customisation and online insurance, showed a relatively low search volume index and small average search numbers per month in cases of Latvia and Estonia. The short-tail keyword car/MTPL insurance is identified to experience remarkable decrease tendencies of interest in all three countries where Lithuania has -7.47 point of the index, Latvia has -8.6 points, and Estonia has -12.43 points. Several factors impact this trend. Firstly, insurance companies, insurance brokers, and banks have developed effective branding in Latvia and especially in Estonia. For instance, a strong re-orientation to digital branding campaigns was identified in the case of Latvia within the period 2017–2018, when based on numbers of average monthly searches, interest in Swedbank insurance (originally, Swedbank apdrošināšana) increased by 34.65%, from 592.50 to 906.66 per monthly search. The same digital marketing strategy was selected by one of the leading region insurance companies Baltic Insurance Company AAS (BTA), which during the same period showed a tremendous investment and efforts to attract end-users via e-channel and overall digital platforms. The increase resulted in a positive outcome of 42.28% on interest, from 399.16 to 690.83 per monthly search. Nevertheless, the Estonian situation in digital branding and marketing activities was different with the main active player Swedbank and the online insurance broker company IIZI Kindlusmaakler AS, while the other five insurance companies had up-down tendencies of interest. It can be assumed that insurance companies tend to apply the strategy of increasing strong associations between

insurance as such and a company's brand; instead, they diversified the focus on integrating terms of specific products or services to the insurance concept by triggering associations among a product or service, a brand, and insurance. Secondly, a rapid increase of interest from end-users on other online insurance products, such as travel, home insurance, CASCO, or health insurance, is also an influential factor. Here, specifics of a country have a leading role in understanding and connotations of insurance, and the listed factors confirm a heterogeneity of digital platforms and solutions in the Baltic region.

Overall, all three markets appear to have the potential for a higher penetration level of digital marketing due to the dominance and use of short-tail keywords, which mostly consist of two or three keywords. These search keywords typically have a high cost and competitive demand with a low probability of conversion. To compare, the standard model of Search Demand Curve and overall global practical trends in digital marketing confirmed that 70% of search traffic comes from long-tail keywords, which consist of four to six specific keywords and have high conversation rates (Kritzinger & Weideman 2013).

3.2. A CASE STUDY OF LITHUANIAN, LATVIAN, AND ESTONIAN E-SALES PLATFORMS IN NON-LIFE INSURANCE

Coming back to e-sales platforms of the Baltic non-life insurance market, first, it should be noted that here they serve as a digital form of the business-to-consumer (B2C) strategy and specific e-commerce functionality. Furthermore, an existing set up of e-sales platforms illustrates a vital distribution infrastructure of multi-channel retailing and has an aim where stakeholders of insurance companies would complement the traditional insurance sales channel with the online channel (Sekulovska, 2012; Frazer & Stiehler, 2014). On the other hand, a variety of existing framework forms and application scopes create issues of distinguishing them as marketing-oriented, product-oriented, target audience-oriented, and/or technical-oriented frameworks. Moreover, a qualitative assessment on an application-level of customisation and personalisation is difficult (Koutsabasis et al., 2008). Therefore, a descriptive framework of a multidimensional functional and product-orientated assessment matrix has been designed. It also incorporates features of personalisation and customisation from the perspective of a customer path by avoiding technically orientated evaluation of platforms. This way, the operational

as-is status of the digital sales platforms is presented and analysed practically to use for future academic discussions and/or practical application. In detail, the multidimensional assessment matrix has two main layers:

- The theoretical layer of nine online customisation framework combinations, as per Table 4, consists of three sub-layers, where possible combinations of customisation, personalisation, and standardisation are defined (Table 4). As per Table 4, six combined framework versions can be identified next to three standard theoretical frameworks of alternative-based, attribute-based, and question-based online customisation. These combinations illustrate both a theoretical transition among three standard frameworks and practical tendencies on a partial application of different frameworks in organisations, which occurs due to a variety of products or services, complexity, and end-user needs. Possible six combined versions are composed by comparing levels of application of three key framework components: customisation, personalisation, and standardisation and by applying a modified Rob-

inson (2008a, 2008b, 2015) conceptual modelling framework together with the logic of the c-tuple method (Baranauskas, 2020). It should be noted that the selection of the online customisation framework depends on numerous internal and external indicators, such as product or service specifics, including complexity and pricing, market specifics, access and management of user information, technical dimension and capabilities in organisation, legal base requirements and restrictions, retail, customer relationship or marketing strategy and model, cyber insurance, etc. (Kamis et al., 2004; 2008; Park & Yoo, 2018; Wang, 2019). Three standard online customisation frameworks, which were developed by Kamis et al. in 2004, defined the most common options in practice. The alternative-based framework is used for products or services with limited possibilities to be customised as well as to get personalised assistance in the process. Here, the final design of products or services is presented instantly, and one of the listed options must be selected. In the case of the attribute-based framework, a different logic of the customisation pro-

Tab. 4. Nine combinations of online customisation frameworks

TYPES&FEATURES	ALTERNATIVE-BASED (AL-B)	ATTRIBUTE-BASED (AT-B)	QUESTION-BASED (Q-B)
Alternative-based (AL-B): Customisation level — Low Personalisation level — Low Standardisation level — High	(AL-B)	(AL-B) + (AT-B)	(AL-B) + (Q-B)
Attribute-based (AT-B): Customisation level — High Personalisation level — Middle Standardisation level — Middle	(AT-B) + (AL-B)	(AT-B)	(AT-B) + (Q-B)
Question-based (Q-B): Customisation level — High Personalisation level — High Standardisation level — Low	(Q-B) + (AL-B)	(Q-B) + (AT-B)	(Q-B)

Source: elaborated by the author based on Kamis et al., 2004; Baranauskas, 2020.

Tab. 5. Sample table of evaluation matrix of e-sales platforms at a product and functional level

COUNTRY	PRODUCT	FEATURES					
		STANDARDISATION	CUSTOMISATION		PERSONALISATION		
			INSURANCE OPTIONS	ADDITIONAL INSURANCE RISKS AND/OR ATTRIBUTES	SELF-SERVICE SYSTEM	CHAT	MULTILANGUAGE
XXXXX	MTPL						
	Travel						
	Property						

cess is used, and a more active end-user role is expected. Here, personalisation features are still vague, free selection of standard attributes is offered in the design phase, but, in general, a customisation level is defined as high. The question-based framework is most oriented to customisation and personalisation with an end-user actively engaged from the beginning of the process to building a bespoke type of products or services. This way, the value co-creation in forms of enjoyment and perceived control is transferred to end-users to increase trust, brand loyalty, and willingness to buy in the future (Kamis et al., 2004; 2008).

- The practical layer, as per Table 5, consists of a theoretical layer application at two e-sales platform dimensions: country and product & functional. To ensure the objectivity and validity of results in the evaluation matrix, the analysis of theoretical frameworks of alternative-based, attribute-based, and question-based online customisation was conducted by comparing the same three categories of products and three innovative insurance features. These insurance product categories and features of innovative insurance were analysed within all e-sales platforms in three Baltic countries — Lithuania, Latvia, Estonia.

Following Table 5, it should be stated that the selection of different insurance options in this evaluation stands for a form of the AL-B framework and has a meaning of at least two pre-defined insurance offers for an end-user. A possibility to build a fully customised insurance product from scratch using a range of features or modify a provided offer by selections from an add-on list, e.g., selecting additional insurance coverages as well as attributes, such as payment instalment or payment option, present an AT-B framework. The standardisation feature was included because it was a core component of insurance products and services for a long time (Koutsomitropoulos & Kalou, 2017).

Moreover, here, this feature also has a meaning of strictly defined insurance product boundaries and can be illustrated by the Motor Third Party Liability (MTPL) product, which is compulsory by law in all three Baltic countries and has clear and standard components. The personalisation level was evaluated considering the following three innovative insurance features and functionalities identified in e-sales platforms: a self-service functionality with a possibility to create and manage the personal account, a live chat,

and a multilanguage selection in the front-end. Furthermore, these three personalised insurance service outcomes illustrate a fundamental basis for the Q-B framework implementation. The selected product was made under the logic of being the most popular and recognisable online insurance product for private persons. The company selection is based on two criteria:

- it is a company, which operates on a full scope of insurance services as well as in legal liability of the insurance market of a selected country, has a clear branding, operations branches and processes;
- it is not an insurance broker, does not operate in a selected country as a web-based price aggregator or as a provider of white-label insurance solutions.

According to two above-defined criteria, the following companies per country and their websites were selected and analysed. In Estonia, nine companies were selected — Kindlustusselts BTA Baltic Insurance Company (www.bta.ee); ADB Compensa Vienna Insurance Group (www.compensa.ee); ERGO Insurance SE (www.ergo.ee); ADB Gjensidige Eesti filial (www.gjensidige.ee); If P&C Insurance AS (www.if.ee); PZU Kindlustus on Leedu kahjukindlustusseltsi AB Lietuvos draudimas Eesti filiaal (www.pzu.ee); Salva Kindlustus AS (www.salva.ee); Seesam Insurance AS (www.seesam.ee); Swedbank P&C Insurance AS (www.swedbank.ee). In Latvia, nine companies were selected as well — AAS BALTA (www.balta.lv); Baltijas Apdrošināšanas Nams AAS (www.ban.lv); Apdrošināšanas akciju sabiedrība BTA Baltic Insurance Company (www.bta.lv); ADB Compensa Vienna Insurance Group (www.compensa.lv); ERGO Insurance SE Latvijas filiāle (www.ergo.lv); ADB Gjensidige Latvijas filiāle (www.gjensidige.lv); If P&C Insurance AS Latvijas filiāle (www.if.lv); Seesam Insurance AS Latvijas filiāle (www.seesam.lv); Swedbank P&C Insurance AS (www.swedbank.lv). In Lithuania, ten companies selected — Balcia Insurance SE Lietuvos Filialas (www.balcia.lt); AAS BTA Baltic Insurance Company filialas Lietuvoje (www.bta.lt); ADB Compensa Vienna Insurance Group (www.compensa.lt); ERGO Insurance SE Lietuvos filialas (www.ergo.lt); AAS „Gjensidige Baltic“ Lietuvos filialas (www.gjensidige.lt); If P&C Insurance AS filialas (www.if.lt); AB Lietuvos draudimas (www.ld.lt); Seesam Insurance AS Lietuvos filialas (www.seesam.lt); Swedbank P&C Insurance AS (www.swedbank.lt). Analysis of websites took approximately from 20 to 30 minutes each.

Based on the practical analysis (Table 6), overall, methods and tools of Mass Customisation and Mass Personalisation concepts, as well as their combination with standardisation, have a mutually useful outcome for insurance companies and end-users. It also significantly penetrates the analysed e-channel environment and sales platforms of the non-life insurance market in three Baltic countries — Lithuania, Latvia, and Estonia. Moreover, the following conclusions can be distinguished per country and region level: (AT-B) + (AL-B) combination of the online customisation framework is predominant in Estonia. In five cases of a property product, all of them had a possibility from the beginning of the purchasing process to select a specific insurance option or customise a product by considering additional insurance risks or attributes as different payment instalments. In the case of the travel product, the AT-B framework setup was identified in eight out of nine cases. The standardisation of the MTPL product was recognised in all analysed cases, and in three cases, the combined version with the AT-B framework was identified. This is an example of a standardisation legacy in the online insurance sales platform. It also can be defined as a specific feature in the Estonian market and end-users because a predominant model in Latvia and Lithuania is a combined version of the AT-B framework as it offers additional insurance risk or attributes, such as a driver or/and passengers accident insurance, assistance on the road, partial or full CASCO insurance, etc. A high level of personalisation is another key feature of Estonia. In seven out of nine cases, the availability of two out of three features of the person-

alised service was identified, and in six cases, all three main features of the personalised insurance service were identified. Otherwise, the existing application form of three selected innovative insurance features and functionalities cannot be linked to the Q-B framework implementation. The main reason is their focus on supporting the leading AT-B, (AT-B) + (AL-B) or (AL-B) + (AT-B) combination frameworks and not serving as a stand-alone customisation option in the online insurance sales path.

A variation among (AT-B) + (AL-B) and (AL-B) + (AT-B) frameworks was identified in Latvia. Here, in both travel and property product lines, there was a possibility to select a specific insurance option from the beginning of the purchasing process and add-ons later in the process in eight out of nine cases of the travel insurance and three out of nine cases in the property insurance. Personalisation of services is also a common and robust feature of the e-channel environment and insurance sales platforms in Latvia: in eight out of nine cases, the availability of two of three features of personalised service was identified. The combination (AT-B) + (AL-B) of the online customisation framework is predominant in Lithuania. In total, in six out of nine cases, additional insurance risks or attributes were available to choose next to the main product, and in at least three out of nine insurance organisations, the AT-B framework was predominant in travel and property insurance sales. This situation illustrates that in Lithuania, a transition from a combined version of standardisation with the AT-B framework to the combined (AT-B) + (AL-B) online customisation framework is ongoing. Moreo-

Tab. 6. Results of the analysis into Baltic non-life insurance e-sales platforms

COUNTRY	PRODUCT	FEATURES					
		STANDARDISATION	CUSTOMISATION		PERSONALISATION		
			INSURANCE OPTIONS	ADDITIONAL INSURANCE RISKS AND/OR ATTRIBUTES	SELF-SERVICE SYSTEM	CHAT	MULTILANGUAGE
Lithuania	MTPL	8/9	0/9	7/9	6/9	2/9	3/9
	Travel	0/9	3/9	6/9			
	Property	0/9	4/9	6/9			
Latvia	MTPL	8/9	1/9	5/9	8/9	3/9	8/9
	Travel	0/9	8/9	9/9			
	Property	1/9	4/9	6/9			
Estonia	MTPL	9/9	0/9	3/9	8/9	7/9	7/9
	Travel	0/9	0/9	8/9			
	Property	0/9	5/9	8/9			

Source: elaborated by the author.

* Analysis was made at February – March, 2020

ver, the existence and vitality of a standardisation approach are confirmed by a low level of personalisation. Here, only in two out of nine cases, an availability for more than one of the basic features of the personalised service was identified. Another key feature in the Lithuanian case was the highest level of customisation in MTPL product sales: in seven out of nine cases, a possibility to customise a product by selecting an additional insurance risk or attributes was recognised.

4. DISCUSSION OF THE RESULTS

Assessment components and results of both theoretical and practical analyses are combined in Fig. 1.

As per Fig. 1 above, and results of the analysis in section 3.2, it can be identified that in Lithuania and Estonia, the combined version (AT-B) + (AL-B) framework of e-sales platforms is predominant and the following assumptions about the level of customisation, personalisation, and standardisation can be made:

- the customisation level varies in a full scale from high to low penetration;
- the personalisation penetration level varies on the scale middle–low;
- the standardisation penetration level varies on the scale middle–high.

This version of the online customisation framework illustrates the situation of user-friendly interface solutions and flexibility in online systems with partly implemented personalisation solutions, but organisations or/and the market are still dealing with a transition from the standardisation approach.

In the case of Latvia, a transitional period is identified, therefore, both (AT-B) + (AL-B) and (AL-B) + (AT-B) frameworks are proportionally applied. Here, the following compositions of main online customisation framework components can be identified:

- in four cases, where the (AL-B) + (AT-B) framework was used, the customisation level varies in a full penetration scale from low to high, the personalisation — in half of the scale from low to middle, and the standardisation — from high to low;
- in five cases, where the (AT-B) + (AL-B) framework was used, the customisation level varies in a full penetration scale from high to low, the personalisation — in half of the scale from middle to low, and the standardisation — from middle to high.

It appears that insurance organisations or/and the insurance market in Latvia have a strong legacy of standardisation, but at the same time, a transition to a higher customisation, and the customer engagement level is recognised, which is created by providing both separate customisation features and personalised assistance in the process.

CONCLUSIONS

The results of the literature review confirm dynamic changes in the field of insurance digitalisation and digital solutions used for primary insurance activities and value chain. Personalised and customised operations in sales, marketing, and product underwriting domains became a key driver of mod-

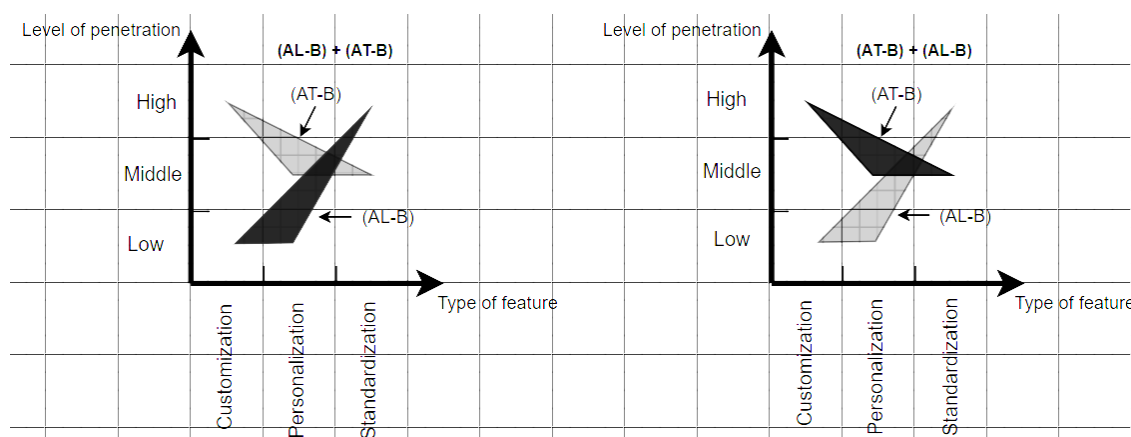


Fig. 1. (AL-B) + (AT-B) and (AL-B) + (AT-B) online customisation frameworks
Source: elaborated by the author based on Kamis et al., 2004; Baranauskas, 2020.

ern insurance studies. The recent theoretical studies in this field are focused on a multilevel and combined analysis of digital and customised insurance frameworks. This transition of theoretical attention to digital, sustainable, and customised insurance products, services, and e-platforms also illustrate the need for modern versions of Mass Customisation and Mass Personalisation concepts and their combined frameworks.

The practical analysis confirms a variety and a high level of customisation, personalisation, and their combinations in the non-life insurance e-sales platforms of three Baltic countries — Lithuania, Latvia, Estonia. It also illustrates that e-channel and combined digital solutions became a tactical tool in insurance sales and a significant part of the integrated marketing communication strategy (IMC).

The analysis revealed a well-designed, simple co-design process and the availability of tailored experience, which is mostly recognised in Estonia, while the weakest widespread was found in Lithuania.

Overall, the state-of-the-art confirms not only the perceived additional benefits of a product and Mass Customisation experience for end-users but also progress and penetration of e-commerce into the insurance industry, which for a long time has featured slow progress in launching these solutions.

Variations between (AT-B) + (AL-B) and (AL-B) + (AT-B) online customisation frameworks have been identified in cases of all three Baltic countries: in Estonia and Lithuania, the (AT-B) + (AL-B) framework is used, while in Latvia both combinations of (AT-B) + (AL-B) and (AL-B) + (AT-B) are applied. The application of combined frameworks has both advantages and risks looking from the perspective of future development.

Firstly, by evaluating the main advantages and open possibilities for further development, it is important to outline that existing frameworks allow the integration of new interface solutions with gamification and playfulness elements.

Therefore, an increase of a positive end-user attitude to insurance products, higher emotional brand attachment, and loyalty as well as involvement of the new target audience can be expected. On the other hand, if end users have low computer playfulness intentions and/or high computer anxiety, it will require offering interface solutions where predominant elements would come from the AL-B framework or at least a high level of personalisation integration into versions of AT-B frameworks.

Considering the end-user behavioural patterns, the following trends were identified in the Baltic region:

- the usability and popularity of short-tail keywords, which consist of two or three search keywords;
- a strong influence of a brand and an intensive re-orientation to digital branding promotion in the period 2018–2019 in cases of Estonia and Latvia;
- a rapid increase in online interest in non-motor products, such as travel, property (home) insurance, and health insurance, was recognised in the past three years.

Furthermore, to compare the results of the analysed region to a global scale and an overall development of the insurance business in the long term, it should be noted that digitally customised and personalised solutions seem to undertake a subordinate part in market growth. Moreover, the development of the above-defined frameworks in the insurance e-channel influences changes in sales and back-office processes increases the role of end-users, brings new product innovations and overall technologies along with the insurance specific-value chain, but has rather low expectations for any significant change in premium growth.

The conducted analysis contributes to the theoretical research field by revealing key outcomes of modern online insurance frameworks at different practical levels within Baltic non-life insurance organisations as well as indicates the influence on end-users of insurance platforms. It may also contribute as a foundation to future practical and theoretical research. Overall, the results of the analysis confirm the vitality of the Mass Customisation concept and application possibilities for the non-tangible and non-manufacturing-based practical field. Therefore, future researchers of digital financial product development, online sales, and marketing operations should take the influence of combined online customisation frameworks into consideration. Looking from the digital insurance perspective, further investigations might focus on the urge to evaluate a success rate in insurance sales where customised and personalised online framework solutions were applied. An additional research gap is identified in limited empirical investigations of modern online customisation frameworks widespread within the different profiles of end-users and overall at the insurance product level.

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