Chapter 9
Digital Communication Among Older Workers: Evidence from the European Social Survey

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9.1 Introduction

Since the first scientific publication on digital communication in 1994 (Griffith & Northcraft, 1994), interest in the subject has surged since 2020. Despite this, a widely accepted definition of digital communication remains unclear, and standardised methods for its exploration are still lacking (Strauss et al., 2024). Digital communication builds on general communication principles but exhibits distinct features, including connectivity through multiple linkages, information density, interactivity, non-verbal cues, and time asynchrony (Strauss et al., 2024).

In personal contexts, digital communication is often defined as sharing meaning via digital technologies (Strauss et al., 2024). Conversely, in professional settings, definitions tend to emphasise task-related communication aimed at enhancing team performance, particularly focusing on tools that facilitate work tasks and improve efficiency (Sivunen & Laitinen, 2020). Strauss et al. (2024) conducted a systematic literature review of 84 publications from leading journals, revealing that studies primarily focused on work-related communication in digital spaces such as emails, social media, newsletters, and text messages. They categorised this literature into one-to-one communication, typically involving emails and chat messages, and one--to-many communication, which includes social media posts, mass emails, and online debates.

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Bordi et al. (2018) examined digital communication in the workplace and its effects on employee well-being. Their study identified six key themes that impact this relationship: communication volume, constant availability expectations, message quality, new tool adoption, technical issues, and communication flexibility. While digital communication can lead to strain, it also offers increased autonomy and control at work. Social dynamics—such as workplace norms and conventions—significantly shape how digital communication demands are perceived and managed.

Digital communication represents a paradigm shift in interaction. As society transitions to a knowledge-based economy, the creation, sharing, and communication of information is fundamentally transformed by digital technologies (Strauss et al., 2024). Digital transformation signifies new stakeholder engagement methods, innovative service delivery frameworks, and the establishment of new relationships (European Commission, 2013).

Several authors (Mergel et al., 2019; Rogelj et al., 2021; Tratkowska, 2019) argue that digital transformation is often oversimplified with a focus on technology alone. These authors advocate for a broader approach that considers fundamental organisational changes. Tratkowska (2019) stresses that digitalisation extends beyond technology to include processes, value creation, networking, communication channels, and new experiences. Nadkarni and Prügl (2021) explore both technology-centric and actor-centric views on digital transformation, emphasising that the actual shift in organisations arises from the way technologies are utilised rather than from technology itself.

Supporting this perspective, Komp-Leukkunen et al. (2022) found that the work environment significantly influences whether workplace digitalisation poses challenges or opportunities for older workers. They identified four critical factors affecting older workers' digital inclusion: employer attitudes toward digital competencies, access to teleworking or blended work models, the introduction of new information and communication technology tools, and the availability of training opportunities to enhance digital skills. These factors shape older workers' exposure to technology and their ability to adopt and use new tools.

In this context, digital competence—defined as the confident, critical, and responsible use of digital technologies for learning, work, and societal participation (The Council, 2018)-is essential. The DigComp 2.2 framework (Vuorikari et al., 2022) breaks down digital competence into five areas: communication and collaboration, information and data literacy, digital content creation, safety, and problem--solving. The communication and collaboration area focuses on effective interaction using digital technologies while being aware of cultural and generational diversity. It encompasses skills such as engaging in digital citizenship and managing one's digital identity (Vuorikari et al., 2022). These competencies significantly influence older workers' ability to participate in workplace communication, fostering inclusion and productivity in increasingly digital environments. Despite the importance of these competencies, empirical studies indicate that many older adults prefer to rely on familiar digital functions rather than adopting new ones (Katey & Chivers, 2025). This behaviour can limit their engagement with emerging digital communication practices. König and Seifert (2022) further argue that lower levels of digital

competence among older adults may exacerbate these challenges, reducing their participation in collaborative digital interactions at work.

Research on digital communication among older adults in the workplace is limited. Most studies focus on older adults' digital communication in general (Pirhonen et al., 2020; Sixsmith et al., 2022; Tkalac Verčič et al., 2024; Vulpe & Crăciun, 2019), in family settings (Brown & Greenfield, 2021), or in public environments (Xie et al., 2020), particularly within the healthcare sector (Kruse et al., 2020; Shang & Zuo, 2020). Other research explores older workers' engagement with digital technologies at work (Chappell, 2021; Francis et al., 2019; Hu & Qian, 2024; Neves & Mead, 2020; Poli et al., 2024). For example, Poli et al. (2024) discovered that older and less educated employees, particularly those facing increased workloads and difficulties with technology, were more likely to report dissatisfaction with digital changes in the workplace during the COVID-19 pandemic. Francis et al. (2019) found that those with lower digital literacy used digital tools less frequently and reported lower satisfaction with workplace digitalisation.

Despite these findings, research specifically on older adults' digital communication in the workplace remains scarce. Addressing this gap could involve analysing existing data to develop evidence-based solutions for enhancing workplace digital communication.

A systematic literature review of 42 articles on older workers in digitalising workplaces (Komp-Leukkunen et al., 2022) highlighted the need for a thorough evaluation of older workers, as research in this area is still emerging. The number of studies is limited, theories are evolving, and the empirical framework is not yet fully established.

This chapter explores two key research questions: How do older workers engage in digital communication at work and what factors influence these patterns? Since there is no universally accepted definition of digital communication, this chapter defines it as any work-related communication and shared experiences facilitated by technology, including interactions between line managers and colleagues. The terms 'digital communication' and 'digital interaction' are used synonymously.

9.2 Data and Methods

To analyse patterns of digital interaction in older workers (50–64), we used descriptive statistical analysis and binary logistic regression based on data from the rotating module 'Digital Social Contacts in Work and Family Life' of the European Social Survey tenth wave (ESS ERIC, 2023a, 2023b). For the ESS10, data were collected using a standardised survey questionnaire. A mixed mode method was used. Namely, if the COVID-19 pandemic allowed, it was face-to-face interviews; if not, a self--completion (web or paper) was applied.

9.2.1 Measured Variable

To reveal older employees' digital communication patterns, we measured the frequency of their communication in the workplace using various digital gadgets: on screen, phone, or via text messages. We measured the frequency of technology--based communication compared to direct communication. Also, the available data allowed us to be specific about the communication partner—a line manager or a colleague. The survey question related to how often older employees communicate about work matters with line managers and colleagues using digital gadgets—several times a day, once a day, several times a week, several times a month, once a month, less often or never.

For the binary logistic regression analysis, the variables characterising the frequency of use of different digital media (screen, phone, and texting) were combined. Then, two groups were distinguished: those who use digital communication often or regularly ('several times a day/once a day/several times a week/several times a month/once a month') and those who use it rarely or never ('less often or never'). These latter binary variables were then used as dependent variables in our regression models. We analysed which factors contribute to infrequent (rare) use of digital technologies, in other words, which factors hinder digital communication.

9.2.2 Independent Variables

Prior to applying the binary logistic regression, several categorical variables were regrouped, e.g. the variable 'type of organisation' worked was categorised into three groups: 'public sector organisation' (combining 'central or local governmental', 'other public sector, such as education and health' and 'a state-owned enterprise'), 'private organisation' and 'self-employed, other'. Establishment size was categorised into 4 categories (combining '100 to 499', '500 or more' into one category '100+'). The categories of all the independent variables are presented in Tables 9.4 and 9.5.

9.2.3 Sample

In our research, the analysis was carried out with those 23 EU Member-States for which DESI was calculated: Austria, Belgium, Bulgaria, Cyprus, Czechia, Germany, Estonia, Greece, Spain, Finland, France, Croatia, Hungary, Ireland, Italy,, Latvia, Netherlands, Poland, Portugal, Sweden, Slovenia and Slovakia (N = 66,636). Since we were interested in employees aged between 50 and 64 years, we selected those respondents who, during 7 days previous to the survey, had paid work and their age was between 50 and 64 years (N = 12,913). Moreover, in the second step of our

analysis, we paid attention to these subgroups of employees aged 50 to 64 years: women and men in good/poor health. To enhance the validity of the data interpretation, we created a control group consisting of working individuals aged 49 years and younger ($N = 21{,}973$).

9.2.4 Country-Level Contextual Data

We included a contextual variable to test the relationship between the proportion of employees aged 50 to 64 years communicating digitally about work matters with line managers and colleagues and the level of digital development of the respective country monitored by the composite Digital Economy and Society Index—DESI (European Commission, 2022). This contextual variable summarises relevant indicators of Europe's digital performance (including four main dimensions: Human capital, connectivity, integration of digital technology, and digital public services) and it tracks the evolution of EU member states regarding digital competitiveness.

In the analysis, the EU-23 countries were quartile-ranked based on the DESI index scores, high, advanced, medium and low—as it is shown in the Table 9.1. We have also included a compelling case study of the Baltic States—Estonia, Latvia, and Lithuania—to gain deeper insights into the realities faced by older workers in regions showcasing remarkable economic growth, digital transformation, and the challenges of an ageing population.

9.2.5 Data Analysis

First, we descriptively examined the spread of digital communication at workplaces in DESI clusters-quartiles. Second, we focused on employees aged 50 to 64 years and examined, using an exploratory data analysis (EDA), predictors of their digital communication on work issues with line managers and colleagues. Then, a series of binary logistic regression models was performed separately for communication with line managers and colleagues to examine the association of each predictor with the outcome. These two binary regression models were performed separately for the four country groups identified in Table 9.1 and additionally, for the fifth group of the Baltic countries, giving a total of ten models: (1) Q4 countries, N = 1643; (2) Q3 countries, N = 6375; (3) Q2 countries, N = 3167; (4) Q1 countries, N = 1728; and (5) the three Baltic countries, N = 1030 (this latter model included country as an independent variable).

Regarding independent variables, our models included age, gender, subjective health, education, establishment size, work from home, and whether or not the respondents themselves decide how their daily work is organised

Table 9.1 Distribution of EU member states (Only those countries where the ESS10 (2020–2022) survey was conducted and for which DESI indicators are being prepared are included in this chapter) included in the analysis by clusters-quartiles according to DESI-2020 values, scores

EU member state	DESI composite index, score	DESI quartiles (Q)
Finland	58.42	Q1—the first quartile including countries with high digital progress
Sweden	55.75	
Netherlands	54.68	
Ireland	50.82	
Spain	49.72	Q2—the second quartile including countries with advanced digital progress
Estonia	49.05	
Lithuania	44.66	
Belgium	44.24	
Latvia	44.06	
Austria	43.61	
Portugal	43.34	
Slovenia	42.92	Q3—the third quartile including countries with medium digital progress
France	42.54	
Germany	42.07	
Czechia	39.55	
Croatia	37.00	
Italy	36.73	
Slovakia	36.18	
Hungary	35.83	
Cyprus	35.34	
Poland	33.20	Q4—the fourth quartile including countries with low digital progress
Bulgaria	29.82	
Greece	27.58	

Source: European Commission (2022)

and whether or not they are responsible for other employees. In regression models assessing the barriers to digital communication with colleagues, an additional variable: 'speaks to colleagues in person' was included. All variables were included in the model simultaneously, thereby enabling their respective effects to be controlled.

The results are shown in Tables 9.4 and 9.5. All ten models proved to be statistically significant (omnibus likelihood ratio test) and successfully passed the Hosmer-Lemeshov goodness-of-fit test, demonstrating Nagelkerke R2 ranging from 0.12 to 0.26, signifying a weak to moderate effect of the predictors. The overall accuracy of the models was quite high, as the percentage of correctly classified cases ranged from 70 to 77%.

9.3 General Patterns of Communication of Employees Aged 50 to 64 Years in the Workplace

9.3.1 All Forms of Communication with Line Managers

In the digital era, communication patterns at work consist of different combinations of four forms of communication: face-to-face communication, phone communication, communication on the screen, and texting. From the analysed data, on average, all employees irrespective of age speak to line managers several times a week in person and in written form (write emails or messages on other gadgets), talk on the telephone about once a week and speak and see each other on a screen several times a month (Fig. 9.1).

The data on communication with line managers (Fig. 9.2, left column) reveals notable trends regarding older workers aged 50 to 64 years, across different countries. Face-to-face communication is the most frequently used method, with many employees in Q2–Q4 countries interacting in person multiple times a week. In Q2–Q4 countries, two-thirds of older employees engage in face-to-face discussions frequently. However, in the highest quartile (Q1), this number declines significantly,

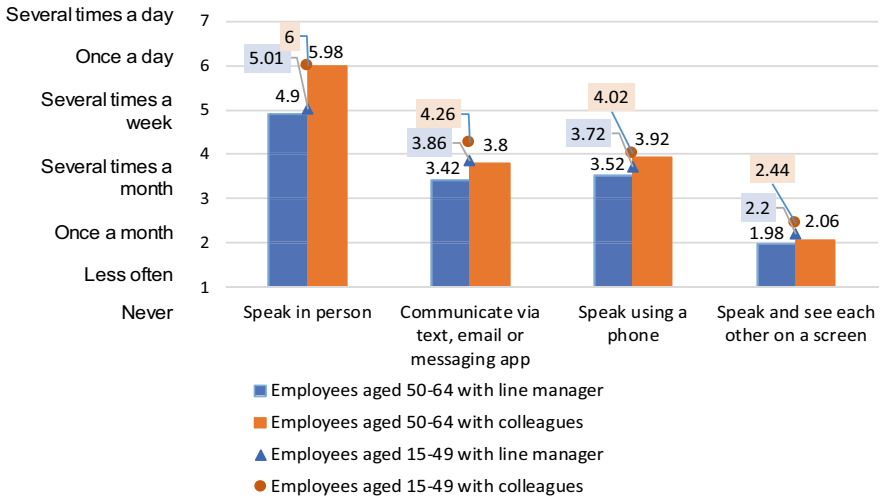

Fig. 9.1 Average frequency of employee communication in the workplace by communication partner, communication form and age group, EU23, 2020–2022, 5% trimmed mean. Notes: (1) See the EU Member-states participating in ESS10 in the Table 9.1. (2) The 5% trimmed mean method was utilised, which reduces the impact of outliers, leading to a more reliable average. (3) The original scale (1–7) was reversed so that larger numbers represent more frequent communication and smaller numbers less frequent communication. Source: authors' calculations, ESS ERIC (2023a, 2023b)

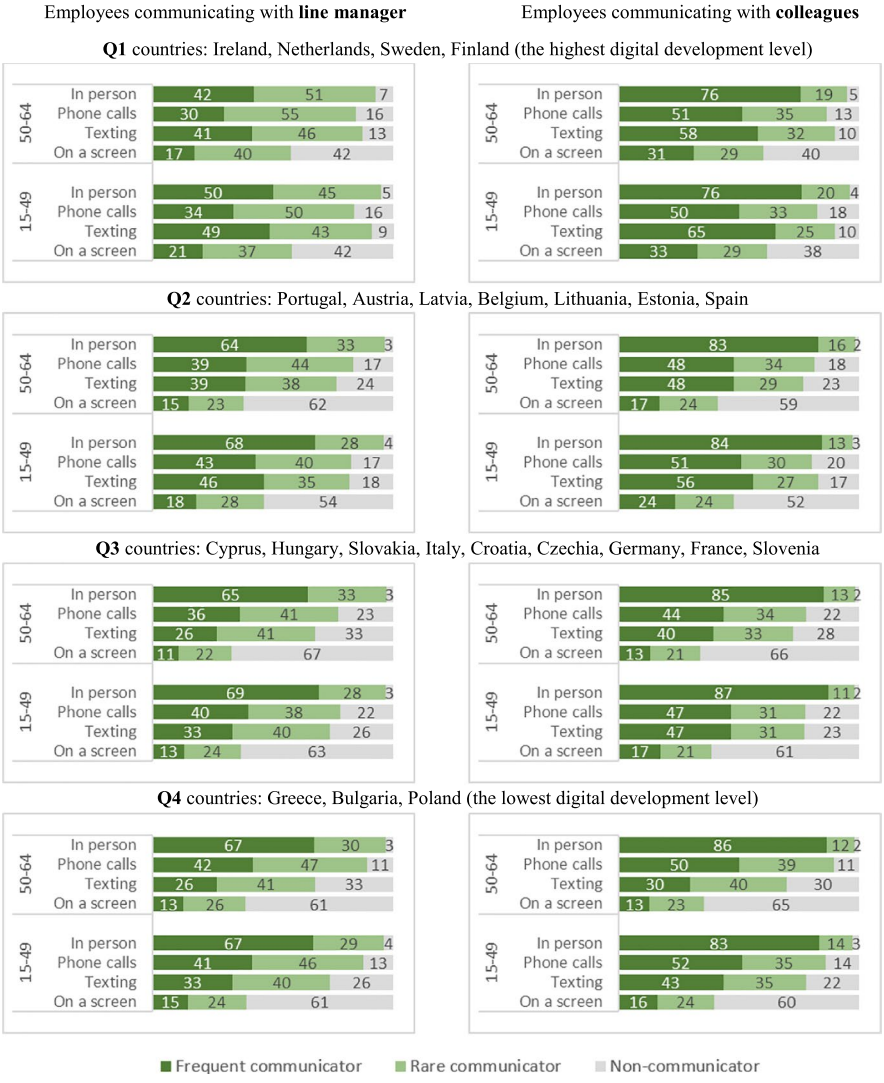

Fig. 9.2 Frequency of employee communication in the workplace by communication partner, communication form, age group and country cluster according to DESI values, EU23, 2020, %. Notes: (1) The sum of percentage in some lines could be equal to 100 ± 1 because of rounding. (2) Countries were clustered by countries' DESI 2020 value (European Commission, 2022), thus forming four quartiles (Q1—the highest DESI values; Q4—the lowest). (3) The original 7-item scale used in the ESS survey to measure frequency of communication was reduced to a 3-item scale for analysis purposes: 'Frequent communicator' = 'Several times a day' + 'Once a day' + 'Several times a week'; 'Rare communicator' = 'Several times a month' + 'Once a month' + 'Less often'; 'Non-communicator' = 'Never'. Source: authors' calculations, ESS ERIC (2023a, 2023b)

with only 42% of older workers doing so. Additionally, approximately 3% of older employees in Q2–Q4 countries never meet with their managers in person, increasing to 7% in Q1 countries.

Conversely, surveyed digital communication forms are less prevalent among older workers in Q2–Q4 countries. In Q1 countries, however, the frequency of technology-based communication tends to become more comparable to face-to-face methods, highlighting a more balanced approach among older employees.

Telephone communication shows that a majority of those aged 50 to 64 years rarely call their line managers, ranging from 41% to 55% depending on the country cluster. The frequency of calls differs regionally, with 30% of older employees in Q1 frequently calling their managers compared to 42% in Q4 countries. The proportion of older employees who never initiate or receive calls varies from 11% in Q4 to 23% in Q3.

Texting is more common in digitally advanced countries (Q1–2), with around 40% of older employees communicating frequently via text. In less developed countries (Q3–4), this figure falls to 26%. Notably, one-third of older workers in lower digital countries do not use texting at all, while the proportion is only 13% in Q1.

Screen communication is the least utilised method among older employees in all countries studied. Frequent use ranges from 13% in Q3 to 17% in Q1, while two out of three older workers (approximately 61%-67%) have never communicated this way in Q2–4 countries.

A Pearson correlation coefficient was computed to understand the relationships between practised forms of communication with line managers (Table 9.2). We found a medium-sized positive correlation between speaking on phone with line manager and communicating with him/her via text, email, or messaging apps, $r = 0.47$, $p < 0.001$; as well as between texting and communicating via screen, $r = 0.39$, $p < 0.001$. Speaking on the telephone was weakly positively associated to communication via screen and speaking in person with a line manager (respectively $r = 0.29$, $p < 0.001$ and $r = 0.17$, $p < 0.001$).

Table 9.2 Interrelationships between communication frequency of employees aged 50 to 64 years and their line managers by methods used, EU23, 2020–2022, descriptive statistics and correlations, $N = 9131$

Variable	M[a]	SD	1	2	3	4
1. Speak with line manager about work in person	4.9	1.7	–			
2. Speak with line manager about work using a phone	3.6	1.9	0.17***	–		
3. Communicate with line manager about work via text, email, or messaging apps	3.4	2.0	−0.02	0.47***	–	
4. Speak with line manager about work and see each other on a screen	2.1	1.7	−0.08***	0.29***	0.39***	–

*$p < 0.05$. **$p < 0.01$, and ***$p < 0.001$

Source: authors' calculations, ESS ERIC (2023a, 2023b)

[a] The original scale (1–7) was reversed so that larger numbers represent more frequent communication and smaller numbers less frequent communication

The frequency of speaking with line managers in person was negatively related to a discussion of work matters with him/her via screen. Although this relationship was weak, it was still significant, $r = -0.08$ $p < 0.01$.

When comparing older and younger employees (Fig. 9.2, left column), older workers generally communicate less frequently with line managers, although similarities exist between the different methods of communication. Notably, older employees are less likely to use texting and screen communication compared to younger employees, particularly in Q2–3 countries. Overall, the trends indicate that older employees in more digitally advanced countries are less inclined to rely on traditional in-person communication methods when interacting with line managers. This trend may result from digitalisation, when technology-assisted communication methods could have displaced traditional ways of communicating. However, it may also reflect a possibly more restrained communication culture in Q1 countries.

9.3.2 All Forms of Communication with Colleagues

Horizontal communication between co-workers is more frequent than that with line managers (Fig. 9.1). Employees typically engage in person, via emails, and telephone calls several times a week, and these interactions exceed the frequency of communication with managers. Different countries exhibit varying patterns based on their digital progress, as shown in Fig. 9.2, right column.

In most European countries, a significant majority of older workers-over 80%-communicate regularly face-to face with colleagues. In countries with high digitalisation (Q1), the share of older workers maintaining frequent in-person communication is smaller (76%). In Q3–4 countries, approximately 85 to 86% of older workers engage in regular face-to-face interactions. Direct communication remains the preferred method among older colleagues, with a minimal proportion (5% in Q1 and 2% in others) not communicating with colleagues directly at all.

When examining various communication methods among older workers, screen-based communication is the least utilised, particularly in Q3–4 countries, where nearly two-thirds never use it for communication between colleagues. In Q2 countries, over half of older workers do not use screens to communicate, and 40% in Q1 countries report similar non-use. Although screen communication is less common, its frequency increases with the level of digitalisation; for example, 31% of older workers in Q1 countries communicate via screens frequently, compared to only 13% in Q4 countries.

Texting and telephone calls are moderate communication methods among older workers. About half of this age group often communicates through these channels. However, texting frequency varies: 58% of older workers in Q1 countries use texting regularly, while only 43% do in Q4 countries. One in ten older workers in Q1 and one in three in Q4 have no texting with co-workers experience. A similar pattern according to countries exists with telephone use, where 13% of older workers do not

Table 9.3 Interrelationships between communication frequency of employees aged 50–64 and their colleagues by methods used, EU23, 2020–2022, descriptive statistics and correlations, $N = 9131$

Variable	M[a]	SD	1	2	3	4
1. Speak with colleagues about work in person.	5.8	1.6	–			
2. Speak with colleagues about work using a phone.	4.0	2.1	0.06***	–		
3. Communicate with colleagues about work via text, email, or messaging apps.	3.7	2.2	−0.03**	0.59***	–	
4. Speak with colleagues about work and see each other on a screen.	2.2	1.8	−0.12***	0.33***	0.48***	–

*$p < 0.05$. **$p < 0.01$, and ***$p < 0.001$
Source: authors' calculations, ESS ERIC (2023a, 2023b)
[a] The original scale (1–7) was reversed so that larger numbers represent more often communication and smaller numbers ess frequent communication

use telephones for work communication with their colleagues in Q1, compared to 18–22% in Q2 and Q3.

A Pearson correlation coefficient was used to evaluate the relationship between the frequency of diverse forms of communication practised with work colleagues (Table 9.3). Again, as in the case of communication with line managers, the more often use of one technology for communication indicates the use of other technologies. The results showed that there was a significant, strong, positive correlation between the frequency of calling colleagues and messaging them, $r = 0.59$, $p < 0.001$. The frequency of communicating via screen with co-workers was positively related to texting, $r = 0.48$ $p < 0.001$, and calling by telephone, $r = 0.33$, $p < 0.001$. It is possible that use of screens for communication with co-workers and messaging to them could be substitutes for speaking in person with them, because these forms of communication correlate negatively, and also these relationships are very weak (correspondingly, $r = -0.12$, $p < 0.001$ and $r = -0.03$, $p < 0.01$) (Table 9.3). The frequency of speaking with colleagues in person is very weakly positively related to calling them ($r = 0.06$, $p < 0.001$).

Horizontal generational communication patterns reveal that younger employees generally utilise digital methods more frequently than older employees (Fig. 9.2, right column). While both cohorts engage in work-related in-person communication similarly, significant differences arise in digital communication forms. Notably, in Q2–3 countries, older workers report a higher non-use of texting and screen communication with colleagues compared to younger workers, with a distinct pattern in Q1 countries highlighting a greater non-use of telephones among younger employees. In digitally advanced countries, among those who do not use the telephone to communicate with colleagues, 13% of older employees and 18% of younger ones were found.

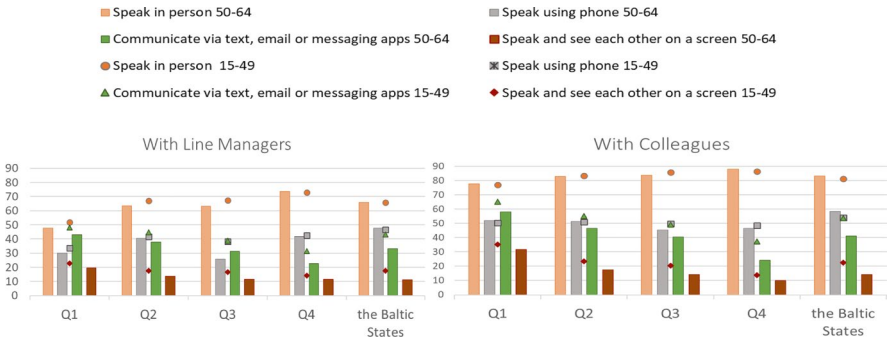

Fig. 9.3 Share of employees-frequent digital communicators with line managers and colleagues about work, by age groups and country clusters (by DESI and the Baltic States), in the EU23, 2020–2022, (N = 36,949), %. Notes: (1) The figure presents the share of respondents who communicate with their line manager or colleagues often (several times a week or more often). (2) Countries were clustered by countries' DESI 2020 value (European Commission, 2022), thus forming four quartiles (Q1–the highest DESI values; Q4–the lowest). (3) The sum of the forms of communication exceeds 100% because employees can communicate with the line manager or colleague by more than one method. Source: authors' calculations, ESS ERIC (2023a, 2023b)

9.4 Digital Communication of Older Employees with Line Managers and Colleagues

Having seen how digital communication permeates working relationships with line managers and colleagues, we now move to directly analysing communication mediated by technologies.

The data (Fig. 9.3) reveal that digital communication among the working population is spread unevenly in workplaces. We can observe several trends.

When comparing digital communication with colleagues to that with line managers, it is evident that all forms of digital interaction (except communication on screen in Q4 countries) are more intensive in horizontal work relationships among colleagues irrespective of age. This trend is particularly pronounced in countries where digital development is most advanced, where co-workers communicate via technologies much more often than with line managers (especially in Q1 countries while communicating via text, email, or messaging apps). It is evident that rapidly developing technology plays a crucial role in shaping these communication patterns.

Comparing forms of digital communication, in the countries of Q4, communication mediated by technologies is dominated by frequent telephone communication (both with colleagues and line managers). In contrast, in the countries of Q1–Q3, such communication is mainly based on frequent texting. Frequent communication at the workplace through screens is still the least common form in all countries regardless of DESI indicator, and it could be related to specific jobs that can still be performed only directly at the workplace.

Regarding the digital communication patterns of older employees, the proportion of those who frequently use technology for communication at work is similar to that

of younger employees (referring to telephone calls with both line managers and colleagues) or lower (referring to texting or communicating on screen with both line managers and colleagues). This finding indicates that older workers lag behind their younger counterparts while adapting to innovative digital communication forms. When the aggregate of all forms of older employees' digital communication in connection to DESI quartiles are examined, it can be observed that the higher the country's digital progress (higher DESI score), the greater the proportion of older employees who frequently communicate digitally with managers and colleagues (except for telephone communication with managers, the prevalence of which decreased in Q1 countries).

While the telephone remains the most prevalent digital communication technology for work-related interactions in the Baltic States across all generations, there is significant disparity in the use of other digital communication technologies. Older workers in the Baltics who are frequent communicators, are notably less likely than their younger counterparts to utilise texting, email, messaging apps, or screens. This disparity in screen communication among older workers in the Baltic States, who belong to the Q2 cluster, underscores the need for targeted communication strategies to bridge the digital communication gap.

9.5 Factors Affecting Employees' Frequent Digital Communication at the Workplace

In order to identify the factors that could hinder employees' digital communication at vertical and horizontal levels, a multiple binary logistic regression analysis was carried out, the main results of which are presented in Tables 9.4 and 9.5. Generally, age was found to be a significant factor, hindering digital technology use (that is, older age is associated with more seldom use) in Q2, Q3 and Baltic countries concerning communication with the line manager, and in Q2, Q3 and, Q4 for communication with colleagues. In the Q1 model, age was not statistically significant in both cases.

Gender was not statistically significant factor for communicating digitally in the Q4 countries (neither with line manager, nor with colleagues). It was also not a significant factor in Q1 (communication with line manager) and Baltic countries (communication with colleagues). However, women demonstrated higher odds of seldom using digital communication tools in most other models.

Subjective health was not a significant factor in almost all models, and where it was, its influence was ambivalent. Thus, not being in good health was associated with more frequent digital communication with line managers among workers from the Q1 sample but with less frequent digital communication with colleagues among respondents from Q4 and Baltic countries.

Table 9.4 Seldom use of digital technologies communicating with line manager (Binary logistics regression results), EU23, 2020–2022

Variable/reference group or interval		Model 1 (DESI Q1) Total $N = 1728$		Model 2 (DESI Q2) Total $N = 3167$		Model 3 (DESI Q3) Total $N = 6375$		Model 4 (DESI Q4) Total $N = 1643$		Model 5 (the Baltics by country) Total $N = 1330$	
		OR	*p*-value	OR	*p*-value	OR	*p*-value	OR	*p*-value	OR	*p*-value
Age (/10)[a]	Interval 15–90 years	0.97	0.861	1.35	<0.05	1.38	<0.001	1.06	0.745	1.62	<0.05
Gender	Male = 1										
	Female	1.06	0.673	1.36	<0.01	1.28	<0.001	1.32	0.081	1.72	<0.01
Subjective health	Good, very good = 1										
	Fair, bad, or very bad	0.65	<0.05	1.17	0.104	1.01	0.920	1.29	0.158	1.01	0.960
Education	ISCED 6–7 = 1										
	ISCED 3–5	1.04	0.800	1.39	<0.01	0.96	0.597	1.53	<0.05	1.93	<0.01
	ISCED 1–2	1.38	0.186	1.84	<0.001	1.54	<0.05	3.84	<0.001	3.53	<0.05
Organisation type	Public = 1										
	Private	0.68	<0.05	0.70	<0.001	0.75	<0.001	0.66	<0.05	1.46	<0.05
	Self-employed, other	1.20	0.554	0.86	0.617	1.05	0.750	1.02	0.975	0.93	0.882
Establishment size	<10 = 1										
	10–24	1.34	0.227	0.90	0.504	0.84	0.136	1.08	0.744	0.75	0.264
	25–99	0.95	0.825	1.01	0.953	1.05	0.667	0.69	0.092	1.39	0.180
	100+	0.77	0.209	0.88	0.319	0.85	0.121	0.66	0.070	1.11	0.689
Responsible for other employees	Yes = 1										
	No	1.91	<0.001			1.60	<0.001	2.36	<0.001	1.53	<0.05

Work from home	Everyday = 1										
	Several times a week - less often	1.05	0.825	1.11	0.501	0.89	0.377	1.18	0.677	1.31	0.390
	Never	5.30	<0.001	3.88	<0.001	3.88	<0.001	3.22	<0.01	4.29	<0.001
Decides how daily work is organised[a]	1–10 scale: 1 = 'no influence'; 10 = 'complete control over this decision'	0.98	0.406	4.56	<0.001	0.94	<0.01	0.96	0.157	0.91	<0.01
Country	Estonia = 1										
	Lithuania									1.25	0.330
	Latvia									0.44	<0.001
	N of obs	1221		2374		4851		950		803	
	R2	0.158		0,119		0.133		0.134		0.203	
	Hosmer–Lemeshow chi2	8.89	0.351	10.18	0.252	4.450	0.814	9.870	0.274	12.16	0.144
	Correctly classified	70.0%		70.4%		73.1%		73.3%		74.0%	
	Mean VIF	1.16		1.12		1.13		1.18		1.18	

Source: authors' calculations, ESS ERIC (2023a, 2023b)

[a]This is an interval variable; therefore, no reference group is applied

Table 9.5 Seldom use of digital technologies communicating with colleagues (Binary logistics regression results), EU23, 2020–2022

Variable/reference group or interval		Model 6 (DESI Q1) Total $N = 1728$		Model 7 (DESI Q2) Total $N = 3167$		Model 8 (DESI Q3) Total $N = 6375$		Model 9 (DESI Q4) Total $N = 1643$		Model 10 (the Baltics by country) Total $N = 1330$	
		OR	*p*-value	OR	*p*-value	OR	*p*-value	OR	*p*-value	OR	*p*-value
Age (/10)[a]	Interval 15–90 years	1.24	0.171	1.54	<0.001	1.25	<0.01	1.59	<0.05	1.23	0.317
Gender	Male = 1										
	Female	1.64	<0.001	1.29	<0.01	1.33	<0.001	0.99	0.985	1.01	0.944
Subjective health	Good, very good = 1										
	Fair, bad, or very bad	1.04	0.799	1.09	0.377	1.11	0.133	1.42	<0.05	1.41	<0.05
Education	ISCED 6–7 = 1										
	ISCED 3–5	1.23	0.183	1.41	<0.01	1.53	<0.001	1.52	<0.05	1.49	<0.05
	ISCED 1–2	2.60	<0.001	2.11	<0.001	2.47	<0.001	2.83	<0.001	2.25	0.143
Organisation type	Public = 1										
	Private	0.95	0.756	0.80	<0.05			0.88	0.460	1.52	<0.05
	Self-employed, other	1.54	0.083	0.78	0.208			0.72	0.305	0.90	0.816
Establishment size	<10 = 1										
	10–24	1.25	0.302					0.61	<0.05	0.63	0.069
	25–99	0.75	0.136					0.45	<0.001	0.76	0.262
	100+	0.54	<0.01					0.29	<0.001	0.53	<0.05
Responsible for other employees	Yes = 1										
	No	1.51	<0.01			1.26	<0.001	1.26	0.196	1.72	<0.01

Work from home	Everyday = 1										
	Several times a week - less often	0.84	0.497	1.29	0.155	1.01	0.967	4.18	<0.001	1.58	0.170
	Never	7.10	<0.001	5.39	<0.001	4.93	<0.001	11.36	<0.001	6.92	<0.001
Decides how daily work is organised[a]	1–10 scale: 1 = 'no influence'; 10 = 'complete control over this decision'	0.96	0.139	0.95	<0.01	0.91	<0.001	0.97	0.188	0.97	0.243
Speaks with colleagues in person[a]	1–7 scale: 1 = 'never'; 7 = 'several times a day'	1.03	0.552	0.91	<0.01	0.89	<0.001	0.90	0.062	1.00	0.980
Country	Estonia = 1										
	Lithuania									1.04	0.870
	Latvia									0.32	<0.001
	N of obs.	1505		2509		5165		1082		822	
	R2	0.262		0.138		0.177		0.149		0.225	
	Hosmer–Lemeshow chi2	4.850	0.773	4.990	0.758	7.580	0.476	10.29	0.245	9.510	0.301
	Correctly classified	77.2%		70.2%		72.4%		74.9%		74.3%	
	Mean VIF	1.23		1.14		1.16		1.22		1.21	

Source: authors' calculations, ESS ERIC (2023a, 2023b)

[a] This is an interval variable; therefore, no reference group is applied

Education, in turn, was significant in all 10 models, and its influence is quite unambiguous—the lower the education level, the less often the respondent uses digital means of communication with his/her managers and colleagues.

Looking at the organisation type, employees in private companies generally use digital technologies more often when communicating with their line managers than in public organisations. However, this tendency is reversed in the Baltic States. The type of organisation was only an important factor in communicating with colleagues in Q2 and Baltic countries. Working in a private organisation increased the likelihood of communication in Q2 countries. However, in the Baltic countries, the opposite trend was observed—working in a private organisation was a barrier to digital horizontal communication. Establishment size does not play any significant role in all 1–5 models of communicating with line managers. However, it is significant when employees digitally communicate with their colleagues: in larger establishments, i.e. they do communicate more often.

Concerning working from home, quite expectedly, older employees who never work from home considerably seldom use digital communication at work.

Workers who are not responsible for other employees use digital technologies less often to communicate with line managers (significant in Q1, IQ3, Q4 and the Baltics) and colleagues (Q1, Q3, and the Baltics). There was a somewhat ambiguous effect of the variable 'decides how daily work is organised'—it played no significant role in digital communicating with the line manager in Q1 and Q4, making communication more frequent in Q3 and the Baltics but less frequent in Q2. Digital communication with colleagues had no effect in Q1, Q4, and the Baltics, and it contributed to more frequent digital communication in Q2 and Q3. Similarly, speaking with colleagues in person did not affect the frequency of digital communication with them in Q1, Q4, and the Baltics, while it increased in Q2 and Q3.

Looking at our case study of the three Baltic States, having controlled for all the above factors, workers in Estonia and Lithuania did not differ in their frequency of digital communication with neither line managers, nor colleagues, while Latvian respondents used digital technologies considerably more often in both situations.

9.6 Discussion and Conclusions

The findings from our research on the digital communication of older workers in the workplace highlight the complex interplay between demographics, education, health, and organisational factors across various countries' stages of digital development.

We observed that in countries with the lowest (Q4) and highest (Q1) digital progress, age and gender do not significantly influence communication with line managers. However, being older and female adversely affects the likelihood of digital communication with line managers and colleagues in countries classified as Q2, Q3, and the Baltic States. In the case of communication with colleagues, the trends are similar: being older increases the risk of using technology less often in Q2–4

countries, and being a woman—in Q1–3 countries. Supporting these insights, Poli et al. (2024) found that, in Nordic countries, satisfaction with technological changes at work is significantly impacted by age, with individuals aged 50 to 59 expressing more satisfaction than those aged 60 and older. Additionally, gendered communication differences in online settings are notable. Research by Chappell (2021) indicates that men generally compose longer messages and dominate communication, while women tend to foster collaboration and alignment with group consensus (Hu & Qian, 2024). Such dynamics pose challenges for women in virtual meetings, where interruptions by male colleagues and the absence of non-verbal cues can undermine their contributions.

Our study underscores the critical role of human capital in digital communication. Lower education levels were linked to limited communication opportunities for older workers in most country groups, except for interactions with line managers in Q1 countries. Poli et al. (2024) also noted that less-educated workers struggle with digital technology and express dissatisfaction with workplace changes. Higher education levels correlate positively with satisfaction regarding technology-related changes, while lower education is associated with diminished digital literacy.

Health also plays a nuanced role in digital communication, with most models indicating minimal impact. However, notable exceptions include employees in poor health who tend to communicate digitally more frequently with line managers in Q1 countries, while those in poor health in Q4 and Baltic countries communicate digitally less with colleagues. The latter fact echoes findings by Neves and Mead (2020), suggesting older adults with poor health are less engaged with digital technologies, likely affecting their satisfaction with workplace changes.

Organisational factors significantly influence older workers' digital communication patterns. Our data indicate that lacking the ability to work from home reduces the likelihood of older workers communicating digitally in both horizontal and vertical contexts. Furthermore, working from home may exacerbate gender inequality; Hu and Qian (2024) reported that women managing family and work communication balance during remote work face a double burden, which is not seen in non-remote workers. The size of the organisation emerged as another significant factor; larger organisations were associated with increased horizontal digital communication in Q1, Q4 countries, and the Baltic States, but did not affect communication with line managers. Additionally, having subordinates positively correlated with frequent digital communication with line managers; those without responsibilities for others were less likely to engage digitally. This factor markedly influenced communication among older workers in Q1 and Q3 countries, and the Baltic States. Overall, our findings align with Solem et al. (2024), who emphasised that the structure of workplaces can significantly impact how digitalisation transforms employees' working lives. According to Bordi et al. (2018), digital communication can act as either a job resource or a demand—facilitating communication and flexibility when serving as a resource, while imposing pressure and demanding additional effort when it functions as a demand.

Our research highlights the complex influence of organisational type on workplace digital communication. In many countries, private sector employees

comparing to public sector are heavier users of digital channels to communicate with line managers. However, in the Baltic States, this trend was reversed, with public sector workers taking the lead in digital communication with line managers. This anomaly can be attributed to the high digitalisation of public services in these countries; the Baltic States excel in the DESI Digital public services component, with scores far above the EU average (74.7 – 86.3 compared to 58.9). In general, our Baltic region case reveals notable national differences in digital technology usage among older workers. In Latvia, older employees were more inclined to use digital technologies for both vertical and horizontal communication compared to those in Estonia and Lithuania. These differences may stem from varying levels of digital progress: Estonia ranks highest in Human Capital and Digital Public services, while Latvia excels in Connectivity and Human Capital, and Lithuania leads in Integration of Digital Technology. Additionally, data collection methods may influence results; Latvia used a self-completion method, unlike its neighbours, potentially affecting responses regarding technology use.

This chapter, while presenting its findings, also acknowledges the limitations. The European Social Survey, a high-quality international study, has been instrumental in identifying communication patterns among older workers. However, it does not provide deep insights into the qualitative aspects of their work-related communication. The influence of specific sociocultural features on workplace communication patterns may affect the generalisability of findings. The data also lack sufficient representation of vulnerable groups, such as those with poorer health, migrants, and workers in specific economic sectors. This underrepresentation restricts our analysis of the complex barriers these groups face and limits our ability to capture insights about the most vulnerable older workers. Therefore, there is an urgent need for further research to fill these gaps and provide a more comprehensive understanding of digital work-related communication.

In conclusion, the findings regarding digital communication patterns between employees and line managers, as well as among colleagues, reveal several important implications for organisations, particularly in the context of demographic diversity and technological advancement.

The observed trend reveals that older employees often communicate less digitally than their younger counterparts, exposing a significant generational divide in the workplace. This situation presents a crucial opportunity for organisations to take proactive steps. Firstly, organisations would benefit from prioritising the implementation of training programs designed to enhance digital literacy among older employees. This investment is essential to ensure all employees can thrive in our increasingly digital world. Secondly, it is imperative for organisations to consciously cultivate a diverse range of communication methods, effectively integrating both digital and traditional approaches to communication. Lastly, fostering exchange initiatives between organisations in digitally advanced countries and those in developing regions can be invaluable. By sharing best practices, organisations can transform digital communication from a job demand to a job resource, as defined by Bordi et al. (2018), thus opening up new avenues for growth and development.

The correlation between lower educational attainment and reduced digital communication once more highlights the crucial role of education and suggests that organisations should consider offering training and development opportunities to upskill employees. This investment not only improves communication but also can boost job satisfaction and retention, particularly among older or less educated employees.

The transformative effect of the work environment—namely, remote work—on communication patterns indicates that organisations should reconsider how they facilitate communication in hybrid or remote settings. Providing platforms and tools that facilitate easy communication between remote employees and their managers could help bridge the gap created by physical distance.

Finally, it would be important to emphasise the need to monitor the alignment between digital and non-digital communication methods. When developing internal communication strategies, organisations would benefit from considering the needs of their diverse workforce. By soliciting feedback on communication priorities and effectiveness, companies could create a more inclusive atmosphere, improve collaboration, increase employee satisfaction, and ultimately achieve better organisational results.

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