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The Significance and Advancement of Digital Competencies in Human Capital Management

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Abstract

Aim: The objective of this article is to identify the significance and conditions for the development of digital competencies in human capital management within enterprises**.**

Methodology: A quantitative research approach was applied using the CATI (Computer-Assisted Telephone Interviewing) technique and a proprietary survey questionnaire. The study was conducted in enterprises operating in Poland with both domestic and foreign capital. Basic statistical tools were used to analyse the empirical data.

Results: The analysis revealed several barriers to the development of digital competencies, including lack of time and awareness of their importance, resistance to change, and difficulties in identifying necessary skills. The growing relevance of digital skills for enterprise operations was underscored.

Implications and recommendations: The limitations of the study include its pilot nature (47 enterprises), which may affect the representativeness of the findings. Another limitation is the

subjective nature of the respondents' self-assessments. The authors recommend extending future research to a larger and more diverse sample and incorporating qualitative methods.

Originality/value: The article presents original research on the development of digital competencies in human capital management, providing a basis for future expansions.

Keywords: digital competencies, human capital, competency development

1. Introduction

In the context of rapidly accelerating digitalisation, digital competencies emerge as a pivotal determinant of organizational success. The enhancement of these competencies not only augments workforce efficiency but also facilitates the agile adaptation of organizations to fluctuating market dynamics. The imperative for digital transformation has necessitated a paradigm shift in corporate operational strategies. A critical aspect of this transformation was underlined by the COVID-19 pandemic, which unequivocally highlighted the influence of enterprises' digital preparedness on their capacity to endure the unprecedented challenges (Zhang & Chen, 2023). The advancement of new technologies has also transformed the operations of HR departments within enterprises. Processes such as recruitment, assessment, and development of an organization's human capital have been altered through the widespread application of digital technologies. As outlined by Wziątek-Staśko (2018, pp. 245-246), the progression of digitalisation necessitates that organizations pursue e-leaders capable of effectively integrating business and managerial competencies with digital proficiencies. The swift velocity of continual transformations not only precipitates the obsolescence of certain skills but also stresses the importance of their perpetual monitoring and the deployment of mechanisms for their enhancement. The purpose of this study was to identify the significance and development of digital competencies in the context of human capital management within organizations.

2. Characterisation and Significance of Digital Competencies

The economic and, in particular, technological development increasingly necessitates the introduction of sudden, yet crucial changes in enterprises. In the era of widespread digitalisation, maintaining an adequate level of competitiveness and innovativeness becomes a challenge. One of the areas requiring a flexible approach is the broadly understood management of human capital, hence the development of employees' digital competencies assumes special importance.

In the context of the rapidly evolving work environment, the ability to effectively use digital tools and information technologies becomes not only a value-added but a fundamental requirement for all employees. The digitalisation of processes is gaining increasing significance, even though it is challenging for organizations to implement. Sangaji et al. (2023) analysed the relation between digital management, digital competencies, and employee efficiency. According to them, digital competencies that allow for the creation and dissemination of ideas and information within the organization are essential for further development and efficiency of employees. Understanding the factors determining the differentiation in development levels of various digital competencies is crucial. Employees with high digital competencies are considered to be successful, and the technology they use contributes to the development of the organization (Sangaji et al., 2023).

Rogacka (2022, pp. 53-64) aimed to systematise the definitions of digital competencies through the examination of two distinct conceptual frameworks. The inaugural framework, referred to as the catalogue or normative approach, conceptualises digital competencies as a comprehensive collection of critical electronic skills requisite for all technology users, ostensibly independent of their engagement in other life activities. Conversely, the relational perspective posits digital technologies as

an inseparable component of everyday existence, emphasising their utility within an expansive contextual spectrum. For instance, Głomb (2009, pp. 32-40) defined digital competencies as the skills required for the utilisation of digital technologies, namely the proficient and critical use of information and communication technologies in various contexts such as work, leisure, education, and communication. Conversely, in a report prepared by a group of researchers from the Institute of Economic Studies and Digital Center Project: Poland, digital competencies were defined as the coexistence of knowledge, skills, and attitudes in utilising information and communication technologies (Buchholtz et al., 2015).

Munsamy et al. (2023) focused on the necessity for new leadership competencies in the context of the fourth industrial revolution (4IR) and its digital disruptions. The authors identified a gap in validated leadership competency assessments for the digital era, despite numerous studies on the impact of 4IR on leadership. As a response, they developed and validated a digital leadership competency scale using a quantitative approach with data collected from 241 employees in an international technology and engineering company. Their research confirmed the validity and reliability of a six-dimensional leadership competency assessment, which includes competencies such as digital adaptiveness, leading digital transformation, digital resilience, cultivating a digital culture, digital skills, and digital competitive intelligence. Their study significantly contributed by creating a comprehensive framework for digital leadership competencies, incorporating generational and levels of work theories.

Building on the theme of digital competency development in the industrial sector, Shirinkina & Strih (2019) also emphasised the increasing importance of digital competences, but from the perspective of assessing employees' digital skills in industrial enterprises, and proposed a methodology based on neural network modeling to estimate these competencies, allowing for greater precision and adaptability in evaluation processes. This approach integrates multiple input variables to assess various levels of digital competence and can provide predictive insights into employee performance and training needs. The methodological framework they developed also provided practical applications for industrial enterprises to identify competency gaps and implement targeted development strategies, thus enhancing workforce readiness in the digital age.

Stofkova et al. (2022, pp. 3-5) highlighted the fact that digital competencies became essential for many individuals during the COVID-19 pandemic. These competencies are crucial for the current digital economy and should be an integral part of educational policy. Their absence can create barriers to personal development and lead to the risk of unemployment. According to the researchers, the increase in automation could reduce the number of jobs available, but may also create new positions. The development of information and communication technologies also significantly impacts employment, creating more job opportunities not only in the IT sector but also in other service sectors such as commerce, industry, finance, and healthcare. Automation, and use of artificial intelligence and robotics, will bring benefits for users, enterprises, and economies by enhancing productivity and economic growth.

In 2018 the MIT Sloan Management Review and Deloitte conducted the Digital Maturity Survey to assess the digital maturity of enterprises. The study aimed to define the challenges and opportunities associated with digital transformation. The authors analysed the concept of digital maturity, understood as a reflection of the degree to which an organization has adapted to the digital business environment. Approximately 30% of the respondents indicated that their companies had achieved digital maturity, while 24% stated their companies were at an early stage of digital maturity. Interestingly, the study suggested that companies in Europe could achieve a higher level of digital maturity if their actions were focused on facilitating the digital development of leaders and employees. One of the key findings was that continuous development and training of employees were essential in the digital environment. At the same time, it was observed that employees receive relatively little support from their organizations in the process of developing their digital competencies (MIT Sloan Management Review & Deloitte, 2018).

The Joint Research Centre and the European Commission's Institute for Prospective Technological Studies developed the European Framework for Digital Competence for Citizens, referred to as DigComp. The document "DigComp: A Framework for Developing and Understanding Digital Competence in Europe" presents a description of digital competencies, organizing them into five areas: Information, Communication, Content Creation, Safety, and Problem-Solving (Ferrari, 2016).

In the first area, information, interpreted as the identification, location, retrieval, storage, organization, and analysis of digital information, as well as the ability to evaluate its relevance, significance, and purpose, three competencies were highlighted: browsing, searching, and filtering information; evaluating information; storing and retrieving it.

The second area, communication, involves communicating within digital environments, sharing resources through online tools, connecting and collaborating with others, digital collaboration, interaction, and participating in community activities and networks, as well as intercultural awareness. Six competencies are distinguished here: communication using digital tools and applications, sharing information and resources, online civic participation, collaboration using digital tools, netiquette, and managing digital identity.

In the content creation area, described as creating and editing new content, integrating and reprocessing existing knowledge and content, creating new concepts, digital content, and programming, as well as understanding, respecting, and applying intellectual property rights and licences, another four competencies were recognised, namely: content creation, content integration and reprocessing, adhering to copyright and licences, and programming.

The safety area covers personal protection, data protection, digital identity protection, security measures, as well as safe and sustainable use. Four competencies were distinguished: tools for protection, personal data protection, health protection, and environmental protection.

The final area, problem-solving, encompasses identifying digital needs and resources, making informed decisions on choosing appropriate digital tools (depending on objectives and needs), solving conceptual problems using digital means, creatively using technology, solving technical problems, and updating competencies – both one's own and those of others. Four competencies were highlighted in this area: solving technical problems, recognising needs and tools necessary for problem solving, innovativeness and creative use of technology, and identifying gaps in digital competencies (Ferrari, 2016).

Kovačević & Labrović (2024) focused on the digital competency requirements for managers at various managerial levels (operational, middle, and executive) in the context of organizational digitalisation. Their study aimed to establish the relationship between the assessed level of companies' digitalisation and the required level of digital competencies for managers. The results indicated that a higher assessment of organizational digital development predicts a higher level of required digital competencies, regardless of the managerial position, accompanied by the main effect of the managerial position on the required level of digital competencies, with no differences in competency domains. These findings stress the importance of the organizational setting in the context of expected digital competencies, as well as the existing differences in levels but not in the domains of competencies related to managerial positions.

3. Methodology

The purpose of this paper was to identify the significance and development of digital competencies in human capital management within enterprises. The following research questions were formulated: (1) Which digital competencies are crucial for organizations? (2) How do organizations develop their employees' digital competencies?

The presented research is of a pilot nature, and its aim was to verify and evaluate the prepared research tool. An original survey questionnaire was used as the research instrument. A quantitative research method was applied. The study was conducted using the CATI (Computer-Assisted Telephone Interviewing) technique with a custom-designed survey questionnaire, which consisted of two sections: the main body of questions and a demographic section. The questions in the main section focused on the development and enhancement of digital competencies in enterprises, including methods and tools for fostering these competencies, the assessment of their maturity, and the associated challenges. The study was carried out in Polish enterprises with both domestic and foreign capital. The data collection took place between May and June 2024. The research procedure involved sending invitations to participate to selected private-sector enterprises. Out of the 98 invitations, 48 enterprises responded. The questionnaires were completed by those responsible for employee competency management, typically HR managers/directors, designated HR department staff, or other relevant managers/directors. Basic statistical tools (mean, median, variability coefficient) were applied to analyse the collected empirical material. The reliability level was calculated using Cronbach's alpha coefficient. The following range was adopted for the coefficient values (DeVellis, 2003, p. 95):

- 0.6–0.65 undesirable,
- 0.65–0.7 minimally acceptable,
- 0.7–0.8 appropriate,
- 0.8–0.9 very good,
- > 0.9 scale shortening recommended.

The value of the Cronbach's alpha coefficient for the applied research instrument was $\alpha = 0.75$. The study involved 47 enterprises from Poland (see Table 1).

Table 1. Structure of the surveyed enterprises

	Manufacturing company		Service company		Production and service company	
	n	%	*n*	%	*n*	%
Polish capital	10	21.3	20	42.5	2	4.3
Foreign capital	6	12.7	7	14.9	2	4.3

Source: own study.

In the enterprises examined, a predominant share had Polish capital. The most substantial representation was found within service-oriented enterprises (27), followed by those engaged in manufacturing (16), with the least number being enterprises that integrate manufacturing and service functions (4) as shown in Table 1. Due to significant discrepancies, the type of business activity of the enterprises was excluded from further analyses.

The investigation spanned across the whole of Poland, noting a concentration of corporate headquarters within specific voivodeships: Podlaskie (21), Mazowieckie (13), Warmińsko-Mazurskie (5), and Dolnośląskie (3). The participants were further requested to classify their enterprise according to the sector, utilising the Polish Classification of Activities (PKD) as a reference framework. Hence, sectors such as finance (8), industrial production (8), construction (6), and commerce (6) emerged as predominant. Given the extensive heterogeneity in terms of both voivodeships and sectors of activity among the surveyed enterprises, these variables were subsequently omitted from further statistical analysis.

4. Digital Competencies in Enterprise Practice – Results of Own Research

Initially the respondents were requested to provide a general assessment of the importance of employees' digital competencies in the enterprise's operations (Table 2). The evaluation was conducted using a scale from 1 to 5, where 1 indicated strong disagreement, and 5 denoted strong agreement.

Table 2. Assessment of the general importance of digital competencies in enterprise development

Specification	$\bar{x}$	*Me*	*V*
Digital competencies are very important for my enterprise	4.40	5	16.17
The development of digital competencies affects career paths/levels in my enterprise	4.06	4	24.29
The development of digital competencies is currently considered a priority in my enterprise	3.45	4	33.58
In my enterprise's budget, funds are allocated for the development of employees' digital competencies	3.36	3	36.39
My organization has a clearly defined strategy for developing digital competencies	3.28	3	33.49

Source: own study.

The results indicated that the respondents highly value both the importance of digital competencies and their impact on career development paths within the enterprise. However, the development of these competencies was not considered a priority by the respondents (mean = 3.45), who similarly rated low the possession of a strategy for the development of digital competencies as well as having financial resources for this purpose.

The majority of the surveyed enterprises set priorities in shaping and developing digital competencies by assessing the current business needs of the enterprise (33.8%). Nearly one-third of them performed this through information obtained from employees, and close to one-fifth through market trend analysis (Table 3).

Table 3. Methods of setting priorities in the shaping and development of digital competencies

Specification	*n**	%
Assessment of current business needs	27	33.8
Gathering feedback from employees	22	27.5
Market trend analysis	14	17.5
Comparison with competitors	9	11.2
The enterprise does not set such priorities	8	10.0

*100% is based on the total number of indications (multiple choice question) – 80

Source: own study.

Just over 11% of enterprises set priorities in shaping digital competencies by comparing themselves with competitors, and 10% did not do this at all. In one case, an enterprise indicated other methods not listed, namely reports from consulting firms and the experiences of other companies in the group.

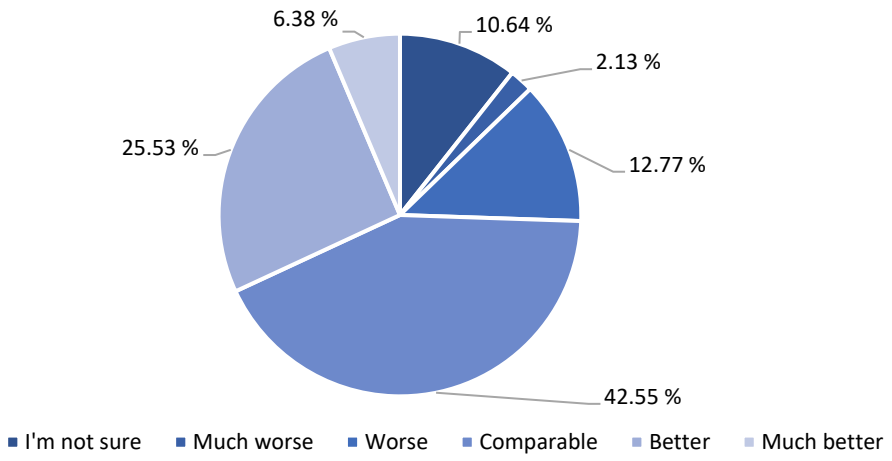

Fig. 1. Self-assessment of the enterprise's digital readiness level compared to competitors

Source: own study.

The enterprises were asked to assess their level of digital readiness compared to the competition, and nearly 43% indicated that their level was comparable to that of their competitors, whilst a quarter responded that their level was better. Only three enterprises stated that they had a significantly higher level of digital readiness than their competitors. Almost 11% of the respondents could not determine the level of digital readiness in their enterprise, while 13% indicated that it was worse than in their competitors.

The surveyed enterprises employed various tools to develop the digital competencies of their employees – among the most popular were internal (29.3%) and external (24.8%) training, as well as e-learning (22%) (Table 4). Less popular methods were practical workshops and mentoring/coaching. In two cases, enterprises had the option to specify other methods, such as international exchange within capital, practice by doing, as well as hiring external specialists.

Table 4. Methods/tools used for shaping digital competencies

Specification	*n**	%
External training	32	29.3
Internal training	27	24.8
E-learning	24	22.0
Practical workshops	16	14.7
Mentoring/coaching	10	9.2

*100% is based on the total number of indications (multiple choice question) − 109.

Source: own study.

The participants were also asked to assess the extent to which their digital competency development strategy was aligned with future market needs (Table 5). The majority described it as highly (25% of total) or moderately (31.90%) aligned. Nearly 28% of the surveyed enterprises indicated that their current strategy was only slightly aligned with future market needs, whilst just under 9% stated that it was not aligned at all.

Table 5. Digital competencies according to surveyed enterprises

Digital competencies	*n**	%
Communication using digital tools and applications	24	14.46%
Storage and retrieval of information	16	9.64%
Innovation and creative use of technology	16	9.64%
Sharing information and resources	15	9.04%
Collaboration using digital tools	12	7.23%
Personal data protection	12	7.23%
Content creation	10	6.02%
Information assessment	9	5.42%
Content integration and processing	7	4.22%
Tools for data protection	7	4.22%
Identifying needs and necessary tools for problem-solving	7	4.22%
Programming	6	3.61%
Technical problem-solving	6	3.61%
Browsing, searching, and filtering information	5	3.01%
Identifying gaps in digital competencies	5	3.01%
Online civic engagement	3	1.81%
Digital identity management	3	1.81%
Copyright and licensing compliance	3	1.81%
Netiquette	0	0.00%

* 100% is based on the total number of indications (multiple choice question) – 166.

Source: own study.

Based on the DigComp report "A Framework for Developing and Understanding Digital Competence in Europe," a list of competencies was developed, and the respondents were asked to identify at least three of the most important ones in their opinion (Table 5).

The vital digital competencies sought after by enterprises comprised: adeptness in utilising digital tools and applications for communication, proficient management of data storage and retrieval, fostering innovation and creatively harnessing technology, and facilitating seamless sharing of information and resources. Conversely, competencies deemed of lesser importance include adherence to netiquette, compliance with copyright regulations, effective management of digital identities, and engagement in online civic activities.

The subsequent phase of the study identified methodologies applied in assessing the forthcoming digital competencies necessitated by enterprises. The respondents mainly highlighted the significance of internal knowledge exchange (32 cases) and insights gained from subject matter experts (25 cases), alongside the analysis of market dynamics (23 cases). In contrast, approaches such as sectoral report scrutiny (15 cases) and competitor benchmarking (16 cases) were less frequently employed for competency identification purposes. Despite this, the majority of enterprises indicated the efficacy or neutrality of current tools employed for assessing developmental needs in digital competencies, whereas a considerable fraction, close to 40%, perceived these tools as relatively ineffective.

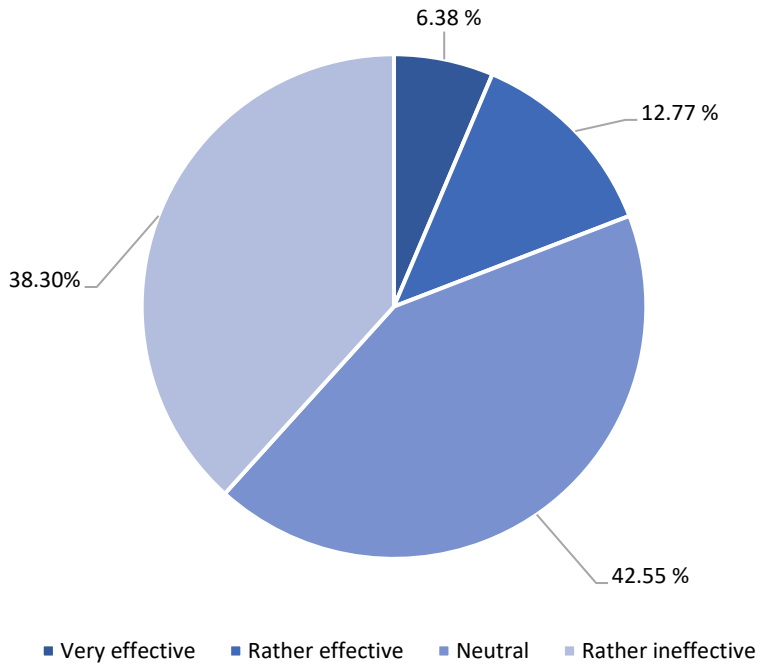

Fig. 2. Assessment of the current utilisation of tools for analysing developmental needs in terms of shaping digital competencies

Source: own study.

The effective utilisation of tools related to shaping digital competencies requires full collaboration among different departments within the enterprise. The respondents were asked about the nature of this collaboration in their case, and approximately 35% stated that it was intensive and regular, while nearly 32% described it as occasional (as part of specific projects). Just under 15% indicated that each department works individually, and 13% emphasised a complete lack of collaboration. To further explore the topic, the respondents were asked to identify the challenges associated with the process of developing employees' digital competencies (Table 6).

Table 6. Challenges in the process of developing employees' digital competencies

Specification	*n*	%
Lack of time of employees	20	25.32%
Lack of awareness of the importance of digital competences	19	24.05%
Employee resistance to change	17	21.52%
Difficulties identifying needed digital competencies	12	15.19%
Lack of appropriate training tools	11	13.92%

Source: own study.

Lack of employee time and lack of awareness of their importance were identified as the biggest challenge in developing digital competences. Equally often, the respondents indicated that employees were reluctant to introduce changes, which was also a barrier in developing the analysed competencies. The statement that received the least number of responses was the lack of appropriate training tools, which in connection with the previous questions seems to be justified (see Figure 2, Table 4).

5. Discussion and Conclusions

Modern human capital management is entering a new, digital generation. Based on the research results it can be concluded that employees' digital competencies are perceived as an important element influencing the development of enterprises (Gonzalez-Varona et al., 2021, p. 5). The respondents highly rated the importance of digital competencies for their organizations, indicating an average rating of 4.4 for their overall importance in enterprise development. The significant impact of digital competencies on career paths was also highlighted, although the development of these skills was not considered a priority in every organization. The study also showed that enterprises were aware of the need to develop digital competencies, but they perceived barriers such as lack of financial resources and the lack of a clearly defined development strategy. Despite this, most declared that they set priorities in the development of these competencies, mainly based on the assessment of current business needs.

Regarding the methods of developing digital competencies, enterprises most often used training (both external and internal) and e-learning. Despite the variety of the tools, the surveyed organizations often experience difficulties in effectively shaping and verifying these competencies, which is confirmed by nearly 40% of the respondents who assessed the currently used methods as rather ineffective.

Analysis of the results indicated a number of challenges related to the development of digital competencies, including the lack of time and awareness of the importance of these competencies among employees, resistance to change, and difficulties in identifying the necessary skills. These challenges may hinder progress in adapting to the demands of the digital age. Interestingly, some similarities, but also differences, were observed in the research conducted in relation to previous reports in this area, conducted by, among others, Rogacka and the Pracuj.pl team. Rogacka (2022, pp. 53-64) presented the results of research analysing the level of digital competencies of employees (based on DIGCOMP Reference framework for the development and understanding of digital competencies in Europe) from the perspective of employees and their superiors. Storing and retrieving information (62.90% of the responses) and sharing information and resources (59.68% of the responses) were the areas that employees rated as the most advanced, which was also confirmed in the responses of the superiors. The employees declared the ability to use various methods and tools to organize files, content and information. The author pointed out that this may be the result of employees being good at using internal communication systems in the company, the issues which gained importance especially during the COVID-19 pandemic. However, the elements that employees indicated as their areas for development where they lack sufficient knowledge, were innovation and creative use of technology (29.84% of the responses) and online civic activity (17.74%). Both the study

conducted by the authors and the report by Rogacka emphasised the significant role of digital competencies, pointing to the growing need for digital skills among employees. In both cases, the employees demonstrated awareness of their digital competences, rating highly their skills in storing, retrieving and sharing information, coinciding with the results indicating a high assessment of digital competences as important for the development of the company.

The report of the Pracuj.pl team and Eurostat data showed that the Polish labour market and society are struggling with challenges related to low digital competencies. This is in contrast to the perception of their importance in enterprise research, where they are rated as very important. In the report by Pracuj.pl team "Digital competencies – a key opportunity and challenge of the labour market", one can see data according to which 36% of job offers published on this portal were related to digital competencies. Interestingly, over the last six months, this value increased by 11 percentage points, and the number of job offers in digital specialisations increased by half in that year (Pracuj.pl, 2024). The report also cited Eurostat data showing that low digital competences in Poland were a big challenge, due to the fact that Poles are among the least digitally proficient in the European Union. Eurostat conducts research on digital competences by developing the Digital Economy and Society Index (DESI). According to these data, 56% of people in the European Union had basic digital skills. Poles occupied the third lowest place – only 43% of those aged 16-74 had digital competencies at a basic level (Komisja Europejska, 2022). Taking this into account, it would be worth examining the disproportions between the employees' perception of digital competencies and the actual needs of the labour market, which may help to better adapt training programmes to the needs of employers and technological trends.

The authors are aware of the limitations resulting from the conducted research. One of them is the representativeness of the sample – this was pilot study conducted among 47 enterprises, hence the results may not accurately reflect the situation in various economic sectors or regions. The conclusions drawn from the research might be difficult to apply in different business or cultural contexts, which limits their universality and generalisability to other companies or industries. Moreover, the study was based on the respondents' self-assessment of the importance of digital competencies, their development and impact on the enterprise, therefore the results may be biased by the subjective perspective of the participants.

Taking into account the identified limitations, directions for further research should include, in particular, expanding the research sample to include a larger number of enterprises from various sectors and regions, which would allow for obtaining more representative data. Research could also be conducted among smaller enterprises and start-ups to understand how digital competencies impact their operations and development. Qualitative research (for example, in-depth interviews or case studies) could provide additional insights, which would allow for a deeper understanding of the causes underlying perceptions of digital competences, as well as explain how companies manage the challenges associated with their implementation. Further research should also take into account the future needs and trends in digital competences, which could help enterprises better plan training and adaptation strategies.

To sum up, although companies recognise the key role of digital competencies in their development and impact on employees' careers, they face challenges related to their effective education and implementation. The paper highlights the need for greater involvement in strategic planning and the allocation of resources for the development of digital competencies, contributing to the better use of the potential of digital technologies in business.

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Znaczenie i rozwój kompetencji cyfrowych w zarządzaniu kapitałem ludzkim

Streszczenie

Cel: Celem artykułu jest identyfikacja znaczenia oraz uwarunkowań rozwoju kompetencji cyfrowych w zarządzaniu kapitałem ludzkim w przedsiębiorstwach.

Metodyka: Zastosowano ilościowe podejście badawcze z wykorzystaniem techniki CATI (ang. *Computer-Assisted Telephone Interviewing*) oraz autorskiego kwestionariusza. Badanie przeprowadzono w przedsiębiorstwach działających w Polsce, z kapitałem krajowym i zagranicznym. Do analizy danych empirycznych zastosowano podstawowe narzędzia statystyczne.

Wyniki: Analiza wykazała szereg barier w rozwoju kompetencji cyfrowych, m.in. brak czasu i świadomości ich znaczenia, opór wobec zmian oraz trudności w identyfikacji potrzebnych umiejętności. Podkreślono rosnącą rolę kompetencji cyfrowych w funkcjonowaniu przedsiębiorstw.

Implikacje i rekomendacje: Do ograniczeń badania zaliczono pilotażowy charakter próby (47 przedsiębiorstw), co może wpływać na ograniczoną reprezentatywność wyników. Dodatkowym ograniczeniem jest subiektywny charakter ocen respondentów. Wskazano potrzebę rozszerzenia badań na większą i bardziej zróżnicowaną próbę oraz zastosowania podejść jakościowych.

Oryginalność/wartość: Artykuł prezentuje autorskie badania w zakresie rozwoju kompetencji cyfrowych w zarządzaniu kapitałem ludzkim. Prezentowane badania stanowią podstawę do ich poszerzenia w przyszłości.

Słowa kluczowe: kompetencje cyfrowe, kapitał ludzki, rozwój kompetencji