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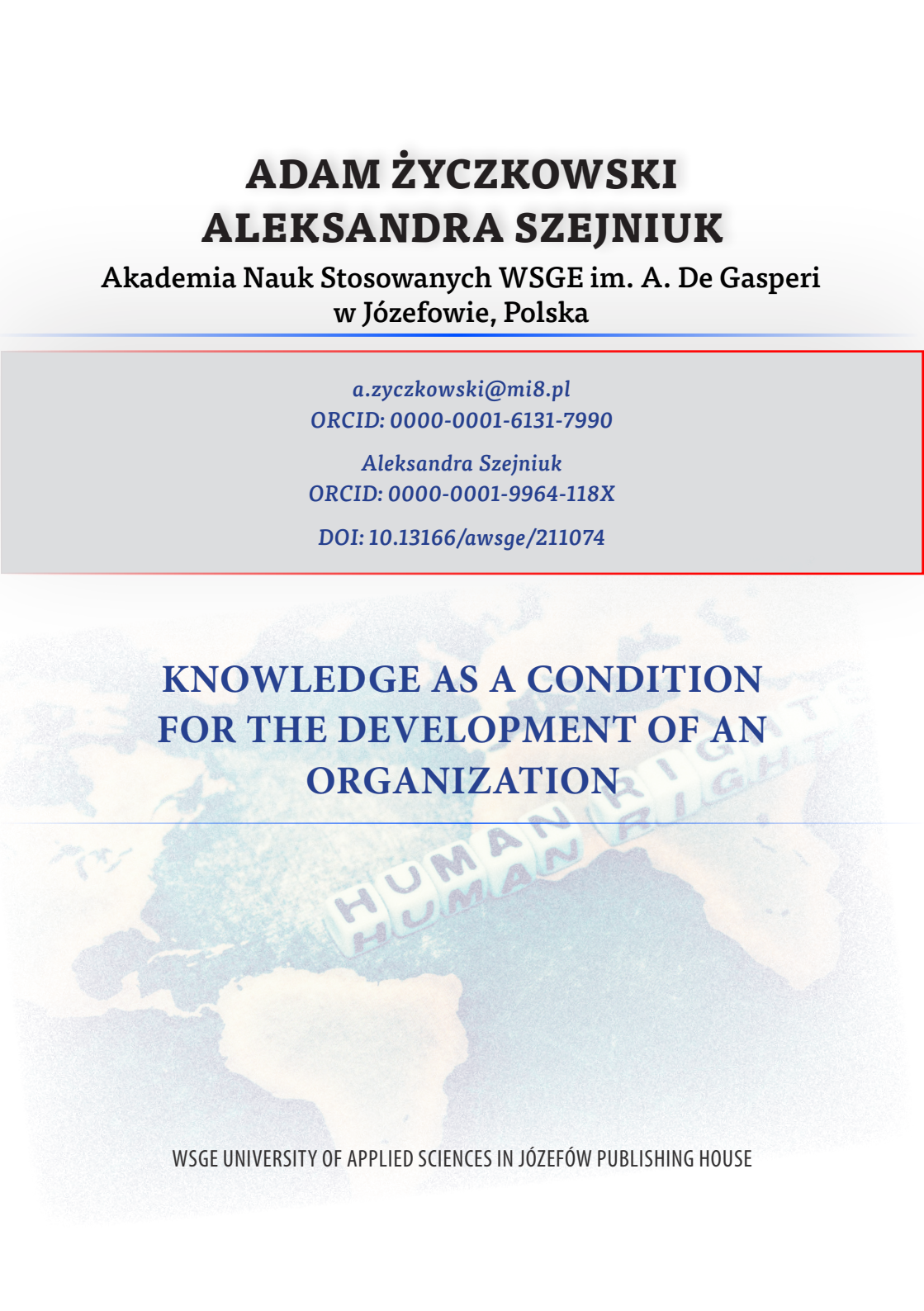
KNOWLEDGE AS A CONDITION FOR THE DEVELOPMENT OF AN ORGANIZATION



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Abstract

Modern organizations operate in an environment characterized by high volatility, intensive development of information technologies and progressive globalization of economic processes. In such conditions, knowledge is no longer just a resource supporting operational activities, but becomes a key factor in strategic development and building a competitive advantage (OECD, 2004, pp. 12-13). Knowledge management (KM), defined as the process of systematically acquiring, organizing, sharing and using knowledge resources in an organization (Hislop, Bosua and Helms, 2018), is currently one of the foundations of sustainable development of enterprises.

In the literature on the subject, more and more attention is paid to an integrated approach to knowledge management, including both technological components (CRM systems, ERP, solutions based on artificial intelligence) and socio-cultural components – such as trust, a climate of cooperation or management commitment (Gold, Malhotra and Segars, 2001, pp. 185–214). Even the best-designed IT system does not bring the expected results if the organization does not create conditions conducive to knowledge sharing, openness, and mutual learning (Nonaka and Takeuchi, 1995).

However, the implementation of KM systems is not universal – it is strongly conditioned by the specificity of the sector, the technological maturity of the company and the management style. In the IT and professional services sectors, the implementation of KM systems is often smoother, thanks to greater openness of employees to innovation and a higher level of digital competence. In contrast, in industry, where hierarchical structures and traditional operating models dominate, this process encounters greater resistance, both technologically and culturally (Andreeva and Kianto, 2012)[1].

The aim of this article is to analyze the impact of knowledge management on the development of organizations in three key sectors of the economy: IT, manufacturing and services. The study uses triangulation of research methods, including literature analysis, case studies and qualitative research with the participation of industry experts. The main research questions concern:

1. identification of barriers and success factors in the implementation of KM systems,
2. examine the relationship between knowledge management and operational efficiency of the organization,
3. defining the role of KM in innovation processes in various sectors,

[1] The results of the study show that the effectiveness of KM depends on adaptation to the organizational culture and the level of technological advancement.

4. and formulating implementation recommendations tailored to the specifics of the industry.

The research approach used allows for a multidimensional assessment of whether KM plays a purely conceptual role in practice, or whether it actually generates measurable business value in various organizational environments.

Keywords: *knowledge, knowledge management, organizational development, innovation, digital transformation*

1. RESEARCH METHODOLOGY

The aim of the study was to analyze the impact of knowledge management on the operational efficiency and innovative capacity of organizations in three sectors of the economy: IT, production and services. Due to the complex and contextual nature of knowledge management processes, it was decided to use qualitative methods that allow for a deeper understanding of the studied phenomena, their determinants and internal mechanisms (Yin, 2018).

The study used Individual In-Depth Interviews (IDIs) with 30 experts from three sectors. The participants were selected on a purposeful basis, according to pre-determined criteria: a minimum of five years of experience in the implementation or use of knowledge management systems, holding a managerial or expert position in the organization, and direct knowledge of KM support tools, such as CRM, ERP or intranet platforms. Such a selection allowed for the collection of material with a high substantive level and practical application (Patton, 2015).

In order to increase the relevance and reliability of the data obtained, the interviewees came from organizations with different levels of technological maturity and diverse organizational cultures. The IT sector was chosen because of its natural connection with advanced information systems and its openness to innovation. The manufacturing industry was taken into account as an environment with a more classical and hierarchical model of operation,

which made it possible to capture the barriers to the implementation of KM in conditions with lower techn€ological adaptability. The services sector, on the other hand, was chosen due to its high dependence on employee knowledge and customer relations, which makes KM an important tool for strengthening the quality of services provided (Creswell and Poth, 2018).

The analysis of the empirical material was carried out using the method of thematic analysis, which allows for the identification of patterns, categories and relationships between the respondents' responses. In the coding process, special attention was paid to: the level of use of knowledge management systems, implementation barriers, forms of support from the management and the observed effects in terms of operational efficiency and innovation.

The choice of qualitative methodology was dictated by the need for an in-depth exploration of dependencies that cannot be captured only at the level of numerical data. Knowledge management as a multidimensional phenomenon includes both technological and social aspects, and their interaction with each other can only be grasped by carefully studying the perspective of practitioners (Gioia, Corley and Hamilton, 2013)[2].

Despite the diligence in the selection of methods and the test sample, this study has several significant limitations that should be taken into account when interpreting the results.

The first limitation is the sectoral scope. The analysis focused exclusively on three sectors: IT, manufacturing and services. Although these industries are representative in terms of diversity in terms of technological advancement and organizational culture characteristics, the omission of other areas – such as public administration, education, health or retail – limits the possibility of generalizing the conclusions to the entire economy. The literature indicates that the organizational and regulatory specificity in the public sectors can significantly affect the dynamics of the implementation of knowledge management systems (Serban and Luan, 2002)[3].

[2] Gioja's methodology focuses on the systematic extraction of conceptual categories from empirical data in an exploratory process.
[3] The authors point to differences in the implementation of KM in the public and private sectors.

The second limitation is the size and nature of the research sample. The survey included 30 respondents, which, although sufficient to conduct a qualitative analysis, does not allow for extrapolation of the results in a statistical sense. Nevertheless, the deliberate selection of participants with a minimum of five years of experience in knowledge management increases the cognitive value of the data obtained (Maxwell, 2013).

Another limiting factor is the local context of the study. All the organizations covered by the analysis operate on the Polish market, which may affect certain implementation conditions – e.g. the level of digitization, leadership style or the degree of formalization of processes. Due to the lack of comparative data with foreign companies, it is difficult to fully assess to what extent the observed mechanisms are universal. However, it is important to note that many KM practices exhibit characteristics of reproducibility across national borders, especially in technology-driven environments (Alavi & Leidner, 2001).

The time range of the study may also be a limitation – the data were collected at a specific point in time, which makes it difficult to analyze the dynamics of long-term changes. In the future, it is worth considering a longitudinal approach, which would allow to assess the durability of the effects of KM system implementations and their impact on the development of the organization in the long term.

Despite these limitations, the methodology captured important relationships between knowledge management and operational efficiency and innovation in the sectors studied, making a valuable contribution to further research.

2. LITERATURE ANALYSIS

Knowledge management as an area of research and management practice has been developing dynamically since the 1990s, and its importance for building the competitive advantage of an organization has been widely documented in the literature (Grant, 1996; Hislop et al., 2018)[4]. However, understanding the role of knowledge management systems in shaping operational efficiency and innovation requires not only theoretical analysis, but also reference to real implementations in diverse sectoral contexts.

A literature review provides a foundation for the interpretation of empirical data. It enables the identification of basic models of knowledge management, success factors and implementation barriers, as well as the relationship between technology and organizational culture. Particular attention is currently paid to the interdisciplinary approach to KM, which combines technological (IT systems, information sharing platforms), social (trust, intellectual capital) and structural (processes, procedures, knowledge exchange standards) elements (Jashapara, 2011).

The theoretical approach has been supplemented with case studies that allow to show the complexity of implementing MC in real organizational conditions. The analysis of specific companies from the IT, manufacturing and service sectors makes it possible to capture the differences in the approach to knowledge management, resulting from the level of digitization, the structure of processes, as well as the attitudes of employees towards technological changes.

The use of combined methods (literature + empirics) allows for a better understanding of whether MC is universal or whether its effectiveness depends on local conditions. In accordance with the triangulation approach, the comparison of the results of own research with the current scientific literature

[4] Grant points out that knowledge is the main source of competitive advantage in conditions of market uncertainty.

increases the reliability of conclusions, while enabling the identification of research gaps and areas requiring further analysis (Flick, 2018)[5].

In the literature on the subject, knowledge management is presented as one of the key elements of the long-term development of an organization and building a sustainable competitive advantage. This concept derives from resource-based view, according to which knowledge – especially knowledge that is difficult to copy, rooted in the organizational culture and competences of employees – is the most important strategic resource of the company (Barney, 1991; Grant, 1996).

One of the basic conclusions of the literature review is that the effectiveness of knowledge management depends on the organization's ability to take an integrated approach – combining information technologies, management processes, and social and cultural aspects. Systems such as CRM or ERP can significantly support the flow of information and process automation, but their effectiveness is limited if they are not accompanied by an open organizational culture and employee involvement in knowledge sharing (Davenport and Prusak, 1998; Hislop et al., 2018).

The researchers' studies also emphasize the important role of interdepartmental cooperation and support from top management. It is management that plays the role of catalyst for cultural change, initiating and strengthening knowledge exchange processes, creating appropriate structures, and providing technical and training resources (Gold et al., 2001; Birasnav, 2014).

A particularly important aspect analysed in the latest work is the development of knowledge-based innovations. According to the theory of organizational knowledge creation (SECI model), organizational innovation depends on the ability to transform tacit knowledge into explicit knowledge and vice versa – continuously, dynamically, and supported by technology (Nonaka and Takeuchi, 1995).

In this way, digital technologies (for example, artificial intelligence, predictive analytics) can support the innovation process by providing assistance,

[5] Triangulation of data allows you to increase the reliability of results by comparing different sources of information.

but they do not eliminate the need for connections and structural aspects for science. Other real-world studies have also found obstacles to KM implementation, including: worker opposition; employees are not encouraged to share knowledge; The technology does not correspond to real requirements or there is simply a lack of adequate digital skills. Such problems are glaring in more traditional sectors, e.g. industry, as such sectors have strong hierarchies and low organisational flexibility (Andreeva & Kianto, 2012; Moffett et al., 2003).

In contrast, in knowledge-based sectors – such as IT and services – the implementation of KM is generally more advanced. Organizations in these industries are more likely to invest in cloud solutions, collaboration platforms, intranets, and innovation support systems, which translates into higher operational efficiency and greater adaptability (Massaro et al., 2016).

3. RESULTS OF EMPIRICAL RESEARCH

The aim of the research was to explore the determinants and effects of the implementation of knowledge management systems (KM) in various sectors of the economy – IT, production and services. The survey involved 30 respondents representing three industries, which made it possible to make cross-sectoral comparisons and identify factors that differentiate the effectiveness of implementations. The analysis of qualitative data showed both the potential benefits of KM implementation and significant barriers limiting their scale.

The collected data clearly indicate that KM systems bring the greatest benefits in the IT and service sectors. Respondents in these areas indicated, m.in other things, improvements in work organization, automation of routine processes, better flow of information between departments, and easier access to tacit and procedural knowledge. CRM and ERP systems have played a significant role here, as they not only organize customer data, but also enable its analysis and use in real time, which leads to improved responsiveness of the organization.

With regard to measurable effects, respondents from the IT sector declared an increase in operational efficiency at the level of 25-30%, and in the service sector – 22-27%. Innovation growth rates were also clear, with 20-25% and 20-23%, respectively. It is worth noting that the most spectacular effects were observed in organizations that combined investments in technology with the simultaneous development of employees' digital competences and a supportive organizational culture, which is in line with the findings of Massaro, Dumay, and Garlatti (2016).

In contrast to these sectors, the benefits of KM were visible but less impressive in industry, with operational efficiency rated at 14-18% and innovation at 11-15%. The obstacles turned out to be, m.in, resistance to change, as well as difficulties in adapting digital solutions to environments dominated by traditional production processes, which is reflected in the research of Moffett, Mcadam, and Parkinson (2003).

A significant limitation to the effectiveness of KM implementation – especially in the industrial sector – was the resistance of workers. In the surveyed industrial companies, the average level of skepticism and aversion towards KM was estimated at 55–65%. The sources of this resistance were varied – from fear of automation and job losses, to uncertainty about one's own digital competences, to a lack of trust in the intentions of the board. These barriers were often psychological and cultural, not substantive.

In the IT and service sectors, the level of resistance was noticeably lower – at the level of 20-40%. Respondents explained this by the increased technological readiness of their teams and a better understanding of the long-term benefits of knowledge management. This is also confirmed by the research of Birasnav (2014), who notes that the key to the acceptance of KM is the perception of its impact on the development of employees' competences and on the increase in their autonomy.

The analysis of the empirical material clearly confirms that the involvement of the management staff is one of the most important factors in the success of KM projects. In organizations where management actively supported change – through infrastructure funding, training, and strategic communication – KM implementations were smoother, faster, and more acceptable to staff.

In the surveyed IT and service companies, the level of management involvement was assessed at an average of 7-9 points on a 10-point scale. In industry, it was only 6-7 points, which reflected a more conservative attitude of managers and the lack of a consistent implementation policy. These data are consistent with the conclusions of Gold, Malhotra and Segars (2001) and Pietrzyk (2021), who indicate that KM cannot be a bottom-up initiative – it requires strategic support and a leadership culture conducive to innovation.

The results of the research clearly indicate that the implementation of KM systems is associated with improved operational efficiency and increased innovation. These effects were particularly noticeable in organizations that used an integrated approach – combining KM with project management systems, HR or controlling. In such cases, m.in improvement of cooperation between departments, shortening the response time to market needs and reduction of operational errors were noticed.

It is worth noting, however, that the effects of KM were strongly differentiated by sector. In industry, despite investments in technology, efficiency increased more slowly, and innovation was often limited by rigid organizational structures and low staff flexibility. In contrast, the IT and services sectors showed greater adaptability and better results in using knowledge as a strategic resource.

In order to enrich the empirical analysis and give it a practical dimension, case studies of three organizations representing different sectors were conducted: IT (Comarch), industrial (KGHM Polska Miedź) and services (PKO Bank Polski). The aim of these analyses was to show how Knowledge Management (KM) systems are implemented in real organizational conditions, what effects they bring and what barriers they encounter.

Comarch – one of the leading Polish technology companies – has introduced a CRM system supported by elements of artificial intelligence. The project aimed to automate customer relationship management processes and integrate distributed data sources into a coherent knowledge base.

The effects of the implementation turned out to be significant: according to internal data, operational efficiency increased by about 30%,

and innovation – assessed by the number of improvements introduced in services and software – by nearly 25%. The response time of sales and service departments was significantly reduced, and the sharing of knowledge between project teams contributed to greater consistency in servicing corporate customers.

This success was not only the result of the use of advanced technologies – equally important was the strategic commitment of the management board and extensive training, which enabled employees to adapt to the new digital conditions (Jemielniak and Koźmiński, 2021). The company has also built an environment conducive to organizational learning, based on trust and open communication.

KGHM, the leader of the mining and metallurgical industry in Poland, decided to implement a knowledge management system inspired by the Kolb series, the key element of which was to document technical knowledge and optimize training processes. This initiative included, among m.in, the digitalization of job instructions, a database of errors and defects with their descriptions, and a platform for sharing knowledge between maintenance and engineering employees.

The results of the implementation were moderate but noticeable. Operational efficiency increased by around 15% and the onboarding time for new hires was reduced by an average of 20%. An important effect was also an increase in occupational safety thanks to the systematic documentation of cases of risky behaviour and their analysis.

The biggest barrier turned out to be the resistance of some production staff to digitization – especially among older employees, who saw KM as a threat to their practical experience and professional position. Difficulties in transferring tacit knowledge into a formalized form were also pointed out (Borecka, 2024).

PKO Bank Polski, as one of the most digitally advanced financial institutions in the country, has implemented a comprehensive CRM system integrated with big data and artificial intelligence modules. A key goal was to better manage customer knowledge, enabling personalization of offers and prediction of customer needs based on transaction history and behavior.

The effects of the implementation turned out to be very positive – operational efficiency increased by about 27%, and the ability to quickly adapt offers to the changing market improved by 20%. The system also enabled faster credit decision-making and increased the relevance of marketing campaigns.

This success was possible thanks to the decisive attitude of the management, which not only provided financing for the implementation, but actively supported the building of a culture of openness and cooperation between departments. Particular attention was paid to the integration of IT competencies with sales competencies, which created new career paths and reduced resistance to change (Głód, 2022).

Case studies indicate that the effectiveness of KM implementation depends to a large extent on four interrelated factors:

1. Matching technology to the specifics of the sector – a manufacturing company has different needs than a retail bank or IT company.
2. Management involvement – especially in creating a culture that supports knowledge sharing and counteracting resistance to change.
3. Organizational and cultural readiness – manifested by, m.in others, the flexibility of the organizational structure, the ability to learn and the openness of employees.
4. Investments in the development of digital competences – which are a prerequisite for the effective implementation of even the most technologically advanced systems.

A comparison of these cases with the results of our own research confirms that knowledge management systems are not a universal solution – their effectiveness is strongly dependent on the organizational and industry context. It is clear that technological factors must be closely linked to social and cultural aspects – only such synergy allows the full potential of KM to be exploited.

Based on the collected qualitative research data and case studies, a comparative analysis was carried out to identify common trends and differences in the approach to knowledge management in different sectors of the economy.

Particular emphasis was placed on: operational efficiency, innovation, commitment of the management staff and the level of resistance to change.

The results clearly show that the greatest effects of KM implementation are achieved in the IT and service sectors, where there is greater technological maturity and openness to change. In the manufacturing sector, delays are observed due to a conservative organizational culture and weaker integration of KM with operating systems.

Indicator	IT	Service	Production	Source[1]
Increase in operational efficiency	25–30%	22–27%	14–18%	1
Increase in the level of innovation	20–25%	20–23%	11–15%	1
Management commitment (1-10)	8–9	7–9	6–7	1
Workers' resistance level (%)	20–40%	30–40%	55–65%	1

Source: Own study based on research results and literature provided in the article

The analysis allows us to distinguish several universal factors affecting the success of knowledge management system implementations:

1. Strong transformational leadership – leaders who not only invest in technology but also inspire cultural change are key to KM's adoption process (North & Kumta, 2018).
2. Aligning technology with real-world needs – CRM, ERP, data warehousing, and AI systems are most effective when they are integrated into daily organizational processes (Dalkir, 2017).
3. Investments in digital competences – increasing employee competence reduces resistance and increases the efficiency of using new tools (Turek, Wojtczuk-Turek, 2021).
4. Organizational culture based on trust and cooperation – organizations in which knowledge sharing is rewarded and supported achieve greater implementation success.

Before you implement – diagnose: conducting an audit of organizational readiness for KM implementation allows you to avoid resistance and costly mistakes. Not just a system, but a culture change: Knowledge management is not just an IT tool, but above all a change in the way we think about the role of information in an organization. Training is not an add-on – it is a condition: investing in training and development of soft skills (e.g. knowledge sharing, cooperation) should be part of the implementation strategy.

4. CONCLUSION

The collected research material and case studies show that knowledge management is one of the key factors supporting the development of an organization, provided that it is implemented in a comprehensive manner, taking into account the context of the sector, the readiness of staff and appropriate technological tools. The effects of the implementation of KM systems are not homogeneous – they depend on a combination of structural, cultural and leadership factors. The future of knowledge management belongs not only to technology, but above all to organizations that can use it wisely.

Knowledge is increasingly perceived as a strategic organizational asset, the effective use of which can determine competitive advantage, innovation and the ability to adapt in a changing market environment. Theoretical analyses, own research and case studies indicate that knowledge management is no longer a luxury reserved for selected organizations, but a necessity in the era of digital transformation and the growing complexity of the business environment.

Practice shows that the success of the implementation of knowledge management systems depends not only on the level of technological advancement, but above all on the organization's readiness for change – cultural, structural and competency. Sectors of the economy differ in the level of this readiness, which translates into a varied effect of implementations. However, regardless of the industry, it is common for all cases that KM becomes a catalyst

for improving operational efficiency, increasing innovation and improving the quality of management.

It should be emphasized that effective knowledge management requires sustained commitment from the management, which sets the direction and builds an organizational culture based on cooperation, trust and information sharing. At the same time, it is necessary to invest in the development of employees' competences – not only in the use of technology, but also in the skills of communication, cooperation and reflective learning.

In the context of future research, it is suggested to further deepen quantitative analyses and explore the specificity of MC in small and medium-sized organizations, where knowledge is sometimes dispersed and processes are less formalized. It is also worth noting the evolution of the role of the knowledge leader and the impact of artificial intelligence on the future of knowledge management.

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