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CUSTOMER-FACING EMPLOYEES' KNOWLEDGE USE BY SUPERVISORS IN MARKET-IMMATURE SMES

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Purpose: The Knowledge Management (KM) literature draws on multiple perspectives to describe this issue. Articles published on the research problem are located at the intersection of market activity, enterprise size, and knowledge sources. Among the topics related to knowledge sources, both internal and external ones are highlighted. However, their inherent characteristics can influence the difficulty and cost of acquiring/creating them. Therefore, it becomes crucial to identify knowledge resources that are critical to the enterprise and within its reach. The article title asks whether, in small- and medium-sized enterprises with limited market experience, employees can be a source of useful knowledge in selected areas (in the perception of managers).
Design/methodology/approach: The research project was conducted through a survey of the opinions of individuals in managerial positions responsible for achieving goals and managing employee teams. For this purpose, a survey was conducted among 139 managers from different SMEs operating in Poland. SMEs were market-immature entities (running for up to 5 years). Respondents provided answers on a seven-point scale. The questions concerned the frequency of using knowledge from employees who interact with customers in seven specific areas identified in previous studies. The obtained data were statistically processed using factor analysis.
Findings: The obtained results suggest that there are two main areas of customer-facing employees' knowledge utilization in emerging SMEs. These are: collaboration with external partners and within the company to reduce operating costs (1), and reporting and planning to increase revenue (2). Therefore, these areas can be identified as both operational and strategic. There is an inverse relationship between the variables and the observed strategic factor.
Research limitations/implications: The purposive selection of respondents was used. The research results can be extended only to the surveyed group of respondents.
Originality/value: This article proposes a cognitive perspective grounded in a research gap: the lack of findings on how small and medium-sized, market-immature companies can effectively approach knowledge management.
Keywords: knowledge management; SMEs; employees.
Category of the paper: research paper.

1. Introduction

Theoretical inspiration for discussing knowledge management (KM) draws from several key concepts underlying this domain of scientific knowledge. The primary descriptive perspective on this topic in management and quality sciences is the strategic perspective, which recognizes knowledge as a key organizational resource. Effective knowledge management is considered essential to achieving sustainable competitive advantage, emphasizing the need to integrate knowledge with organizational strategies (Michna, 2023). Polanyi's distinction between tacit and explicit knowledge (Ujwary-Gil, 2011), applied to the organizational context, often underlies discussions in this field regarding the nature of the environment and development opportunities. Tacit knowledge resides within individuals and is often difficult to express, whereas explicit knowledge can be systematically shared. This distinction allows for the formulation of knowledge-sharing strategies within organizations and for the identification of distinct knowledge assets within organizations (Ujwary-Gil, 2011; Xuan, 2020; Tokarz, Rosiński, 2024).

Understanding KM processes is therefore crucial for enterprise management. Dalkir's integrated management cycle, for example, can be distinguished within the so-called process-based perspective. This model encompasses the following basic stages: knowledge capture and creation, knowledge distribution and sharing, and knowledge retrieval and utilization (Dalkir, 2005; Xuan, 2020). This approach emphasizes how KM practices can impact organizational productivity and efficiency, while also offering opportunities to improve ongoing business activities (Olan et al., 2016). The discourse on knowledge management can also take a different direction, drawing on Andriessen's (2008) metaphorical analysis. It explains how metaphors shape the conceptualization of KM theory and the practice of knowledge management itself. This approach to shaping a cognitive perspective enriches understanding of KM strategies and supports creative approaches to knowledge dynamics (Michna, 2023).

Another critical aspect of research is knowledge transfer between organizational members, including an intergenerational perspective that emphasizes the importance of mentoring and mutual trust for the effective sharing of personal knowledge. This relates to the issue of human resources within the enterprise, their experience, and competence levels. This transfer is crucial for optimizing KM within organizations, especially in relation to organizational social networks (Tokarz Rosiński, 2024; Okere, 2017). However, implementing and executing KM is not without challenges. Barriers to knowledge sharing, such as cultural resistance, individual attitudes, and structural obstacles, pose significant obstacles to effective knowledge management (Egwunatum Oboreh, 2022). Creating a culture that supports knowledge sharing and fosters collaboration is essential to overcoming these barriers (Whelton et al., 2002).

The role of knowledge management has evolved today, particularly under the influence of digital transformation. Organizations are challenged to adapt their knowledge processes to leverage new technologies across acquisition, transfer, and utilization. This interaction between knowledge management practices and technological competencies is crucial in today's organizational value creation (Michna, 2023; Kianto et al., 2014).

Discussions about knowledge management also extend to specific organizational contexts, such as small and medium-sized enterprises (SMEs). SMEs, crucial to the economic growth of many national economies, face unique knowledge management challenges due to limited resources and the lack of formal knowledge management systems. Promoting a culture of knowledge sharing and leadership practices that nurture organizational commitment are key strategies for strengthening KM in SMEs (Durst et al., 2024; Hariputra et al., 2023). A cognitive framework distinguishing internal KM (focusing on employee collaboration and processes) from external KM (involving external partnerships) offers valuable insights for adapting practices in this regard (Durst et al., 2024). Furthermore, the impact of digital transformation on SMEs highlights the need for innovative approaches to navigating technological complexities in KM (Michna, 2023; Zwierzchowski, 2023).

The aim of this article is to determine whether, in the case of small and medium-sized enterprises with limited market experience (this means that they are grappling with a range of organizational and market-related constraints and challenges), it can be concluded that it is possible to group the main areas of utilization of employees' knowledge derived from customers. This aim will be achieved based on a survey of the opinions of individuals in managerial positions responsible for achieving goals and managing employee teams.

2. Knowledge management from the SME perspective

Effective knowledge management (KM) practices are crucial to the success of small and medium-sized enterprises (SMEs). These practices emphasize collaboration and knowledge sharing, both internally and externally. Internally, fostering collaboration between employees, managers, and stakeholders through various tools, such as Web 2.0 technologies, is essential to enhancing KM capabilities (Narayanan, 2023). Employee expertise is therefore crucial for creating new knowledge and fostering innovation (Bolisani, Scarso, 2016; Martinez-Costa et al., 2019). Externally, SMEs benefit from knowledge acquisition through strategic alliances, partnerships, and relationship networks, which increase their absorptive capacity and enable them to effectively utilize this knowledge (Durst, 2024). Customer knowledge and market insights are invaluable for developing products and services tailored to market requirements (Georgiana Balau et al., 2020; Baena-Luna et al., 2021). Collaboration with suppliers, competitors, and academic institutions further enriches SMEs' knowledge base (Durst et al.,

2024; Narayanan et al., 2023). Communities of practice provide additional platforms for knowledge exchange, enhancing innovation and operational efficiency (Pattinson, Preece, 2014; Zhou et al., 2021).

The understanding outlined above provides a strategic perspective on knowledge management. This approach encompasses addressing issues such as integrating knowledge management with organizational strategy, communicating its benefits, and fostering an appropriate organizational culture. Alignment of knowledge management initiatives with business goals is crucial to their success (Riege, 2005; Dale, 2011). Clear communication by management about the benefits of knowledge management promotes employee adoption and utilization. Lack of trust and knowledge hoarding behaviors can undermine knowledge sharing, highlighting the need for a culture that encourages collaboration (Egwunatum, Oboreh, 2022).

A key aspect of KM, therefore, is overcoming barriers such as technological, cultural, and communication challenges. Creating a supportive organizational culture and investing in technology and training are essential to overcoming these barriers (Egwunatum, Oboreh, 2022). Furthermore, SMEs should focus on customer and market knowledge to tailor their offerings to customer preferences. Co-creation with customers drives innovation and increases the effectiveness of achieving business goals, especially when tailored to the situational context of specific industries (Abrokwah-Larbi, 2023; Yoon et al., 2023). Continuous learning and adaptation are crucial for SMEs to remain competitive in a dynamic environment. Promoting a culture of adaptive learning ensures that knowledge remains relevant and accessible, enabling organizations to effectively respond to social, environmental, and technological changes (Durst, 2024). Organizational leadership plays a key role in shaping a knowledge-based culture. Top management must prioritize KM initiatives and ensure they are strategically aligned with the organization's goals—and therefore demonstrate commitment to this (Egwunatum, Oboreh, 2022).

The crucial role of knowledge assets makes their protection increasingly important, especially in their digitized form. This is often the case because modern KM solutions rely heavily on IT. SMEs must develop measures to protect knowledge from threats such as cyberattacks while maintaining effective processes for generating, transmitting, and protecting knowledge within IT systems (Durst, 2024). Technology itself, therefore, plays a significant role in KM, enabling the capture, storage, and sharing of knowledge as an asset. Knowledge management systems ultimately contribute to improved operational efficiency and innovation (Centobelli et al., 2018). Experience-based knowledge from previous projects and customer interactions also significantly enriches an SME's knowledge base, even if it is digitalized (Sandberg, 2014).

Resource allocation remains a constant challenge for SMEs, and limited availability of personnel, time, and technology often hinders knowledge management practices. Investing in training and a robust ICT infrastructure is essential to overcome these barriers (Oliva, Kotabe, 2019). Furthermore, measuring knowledge management effectiveness requires clear metrics to

assess the impact of knowledge management initiatives on overall business performance (Davenport et al., 1998).

However, research findings suggest differences in KM implementation between young and established SMEs. Mature SMEs with a long history and established market position may be more likely to demonstrate a well-developed KM culture, infrastructure, and extensive networks that support effective knowledge sharing. Young SMEs, while agile and flexible, may struggle with resource constraints and limited experience. These distinctions highlight the need to develop tailored knowledge management strategies that account for specific needs and opportunities (Magni et al., 2021).

In summary, SMEs should adopt a holistic approach to knowledge management that encompasses collaboration, strategic alignment, continuous learning, and technology. By leveraging diverse sources of relevant knowledge (including internal and external sources generated at the intersection of the organization and the external environment) and addressing strategic challenges, SMEs can increase their competitiveness and drive sustainable growth (Esfandyarpour et al., 2024). It is important to remember that large enterprises possess the resources and competencies to implement knowledge management solutions in a conscious and broad manner (Hörisch et al., 2015). This context of scale prompts the need to address the research challenge of leveraging employee knowledge in emerging SMEs. This knowledge originates both within the enterprise and in relationships with its stakeholders, and at the same time, it often reflects the individual perspective of the employee and their interactions with representatives of other departments, customers, and contractors. In the context of SME operations, it can therefore serve as an equivalent to knowledge and data derived from specialized management systems, enabling them to overcome resource-related barriers. Its utilization also requires an active role for managers within the enterprise, which relates to shaping organizational conditions conducive to KM. However, it must not be forgotten that contemporary discussions on these issues are often framed within the context of the digitalization of management processes, overlooking an alternative approach based on the personalization of knowledge (Scheepers et al., 2004; Liu et al., 2013).

The current multifaceted cognitive and practical contexts of knowledge management in enterprises allow us to address a research problem at the intersection of selected issues. This research gap stems from a lack of explanation regarding whether supervisors utilize employees' knowledge derived from customers - specifically within the context of limited development opportunities. The issue mentioned above is presented from a novel perspective, combining enterprise size and market experience as sources of business development limitations. Both factors can contribute to the barrier of insufficient resources for implementing technological solutions, including those related to knowledge management. This may necessitate a greater focus on solutions that rely more heavily on human resources and personalized knowledge. From this perspective, customer-originating knowledge is a key aspect, though it is also absorbed by the company's employees who maintain contact with

customers. This entails the challenge of building a reputation among customers, which is considered crucial for the commercial growth of young companies (De Jong et al., 2021).

3. Methodology

The survey covered small and medium-sized service-oriented enterprises (from various industries) operating in Poland. The service-oriented profile of the enterprises makes it possible to address the conditions under which business activities are carried out through direct customer contact, thereby highlighting the issues under investigation. Employment was used to determine whether a company was classified as a small or medium-sized enterprise. Small enterprises employed between 10 and 49 employees, while medium-sized enterprises employed between 50 and 249. The target group of respondents consisted of owners or managers who directly supervised employees performing duties for clients as part of the services offered. Respondent selection was purposive, with availability as a criterion. Each respondent represented a different enterprise. A total of 139 respondents were recruited for the study. Most of them came from the Masovian Voivodeship (n = 90; 64.75%), a voivodeship with the highest level of entrepreneurship in Poland (Nieć, 2025). In the case of small enterprises, 88 respondents were from single-unit companies, and 15 were from branch offices (for a total of 103 respondents from small enterprises). Among medium-sized enterprises, 12 were single-unit companies, 23 were branch offices, and 1 was the company's headquarters (a total of 36 respondents from medium-sized enterprises). Respondents from enterprises operating for no more than two years accounted for 27,33% (n = 38). The remaining 101 (72.67%) represented enterprises operating for a period of two to five years.

The research project also considered the characteristics of the enterprises, expressed in their market immaturity. This means that the respondents represented enterprises that had been operating in the market for no longer than 5 years. This time period stems from research on SMEs in Poland over the last decade, which shows that both the first year of operation and the second or third year (depending on the period studied) can be considered crisis periods. At the same time, fewer than 50% of them survive to their fifth birthday (Przeżylność firmy w Polsce…., 2016; Zakrzewski et al., 2025). These data are consistent with examples from other countries. As D. Nicolo points out, the results of his research on the survival of young enterprises show that in the United States and Canada, the five-year survival rate for enterprises is slightly over 50%. Of course, as indicated, this survival rate may depend on the country, industry, and even the year in which they were founded (Nicolo, 2015). However, the literature emphasizes that these enterprises (young ones) are primarily characterized by limited resources (Murray, 2007) and experiment to identify customers and their needs (De Jong et al., 2021). This also leads to a number of managerial challenges (Parhankangas, 2007).

The adoption of a five-year survival rate is therefore justified and can serve as a temporary censorship for identifying market-immature enterprises. In turn, as the literature indicates, their qualitative characteristics are related to the research problem and the identified cognitive gap.

The survey was designed to verify the following research hypothesis:

H: It is possible to group the areas in which managers use the knowledge of employees who have direct contact with customers.

To verify this hypothesis, a survey questionnaire was designed. Questions asked of managers concerned the frequency of utilization of employee knowledge in specific domains, determined based on previous research results (Komańda, Sowa, 2014). These include: ongoing reporting and analysis, predictive analysis, intra-company collaboration, collaboration with contractors, collaboration with customers, cost reduction, and revenue growth. Respondents provided answers on a seven-point scale. Factor analysis was used to verify the hypothesis.

4. Results

The Cronbach's alpha coefficient for respondent responses across variables was 0.869. This is therefore a satisfactory value (for social sciences, a minimum value of 0.7 is assumed). Therefore, there was no need to exclude any variables for analysis.

The next step was to determine the number of factors using principal component analysis. The Cattell and Kaiser method was used. The Kaiser method retains factors with eigenvalues >1, while the Cattell method, known as a scree plot, visually identifies the breakpoint in the eigenvalue graph. The results of this analysis are presented below (Table 1 and Figure 1). The results in the table show that, according to the Kaiser criterion, it is necessary to distinguish two factors that together explain 71.289% of the variance in the output variables.

As can be seen in the scree plot, the graph is steep towards the second component. The reference line cuts off those factors for which eigenvalues are greater than 1 (component 2 still has a value >1). Therefore, both Catell and Kaiser criteria yield the same solution.

To obtain a good fit of the factors to the data, rotation was applied in the next step of the data analysis. In this case, the Direct Oblimin oblique rotation method together with Kaiser normalization was used. This method allows identification of correlations among factors and does not assume zero factor correlations. Factor loadings were obtained from the Pattern Matrix (Table 2), which represents the unique variance explained by each factor. The threshold factor value (so-called strong factor saturation) was assumed to be 0.5.

Table 1.
Total Variance Explanation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3,937	56,242	56,242	3,937	56,242	56,242	3,274
2	1,053	15,047	71,289	1,053	15,047	71,289	2,996
3	0,773	11,037	82,326				
4	0,502	7,176	89,502				
5	0,361	5,151	94,653				
6	0,208	2,965	97,618				
7	0,167	2,382	100,000				

Source: own work.

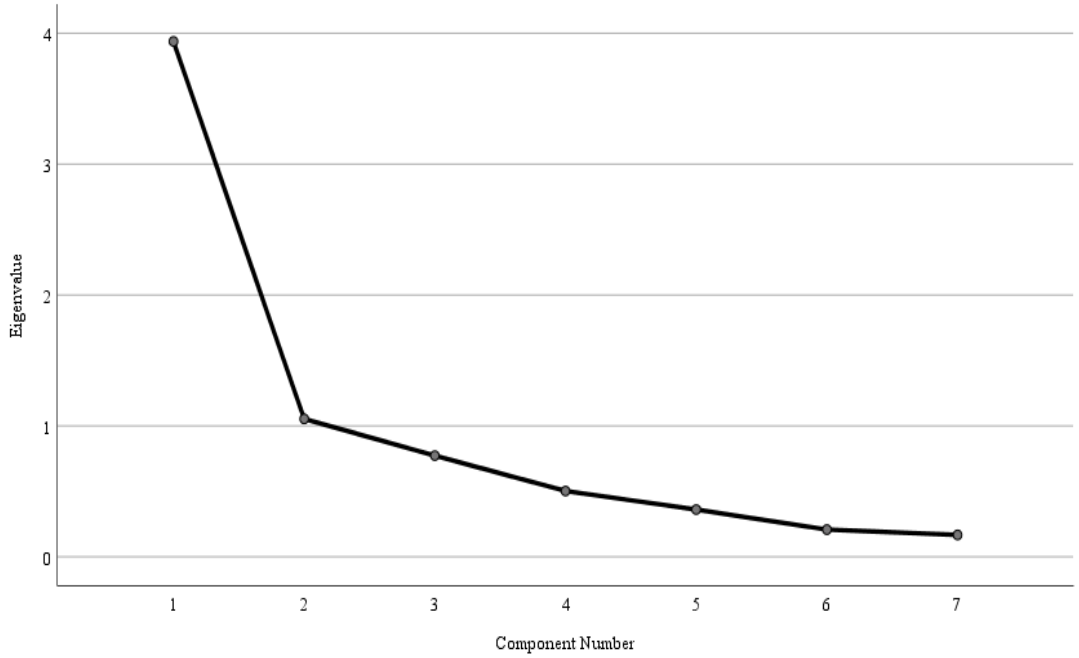

Figure 1. Complex Scree plot.

Source: own work.

The rotation method resulted in a clear separation of two factors. The factor correlation matrix (as the next step in the analysis) also shows that they are negatively correlated (correlation value: -0.446). Therefore, the correct rotation method (Oblimin) was used.

Table 2.
Total Variance Explanation

Variables	Component	
	1	2
Ongoing reporting and analysis		-,935
Predictive analysis		-,906
Intra-company collaboration	,645	
Collaboration with contractors	,796	
Collaboration with customers	,925	
Cost reduction	,607	
Revenue growth		-,506

Source: own work.

The Kaiser-Meyer-Olkin (KMO) test and Barlett's test of sphericity were also conducted. The K-M-O test value was 0.793, and the Barlett test value was 999.796 ($p < 0.001$). These values are significant. The K-M-O test assesses the adequacy of variable selection in factor analysis (i.e., whether dimensionality reduction is justified; the desired value is above 0.5). The higher the value of this test, the more likely it is that there are relationships between variables, which means that the data are better suited for factor analysis.

The obtained results allowed us to assign variables to the two extracted factors. The hypothesis was thus positively verified. For the first factor, these are: cooperation within the enterprise, cooperation with contractors, cooperation with customers, and cost reduction. For the second factor, these are: ongoing reporting, predicting phenomena, and increasing revenue.

The first factor can be linked to reducing the costs of ongoing operations and facilitating them (linked to the operational dimension), and the second to reporting and planning (linked to the strategic dimension). It should also be noted that, in the case of a strategic factor, the factor loadings are negative. This means that they have an inverse relationship between the observed variable and the factor.

5. Conclusions

The research results indicate that it is possible to group variables related to the areas in which managers utilize knowledge derived from employees possessing customer knowledge. It was indicated that the two factors grouping these areas of knowledge utilization are operational and strategic aspects. It was confirmed that there is variation in managers' utilization of this knowledge (by frequency of use) across individual areas, constituting a cognitive result in the management discipline. This variation is also characterized by an inverse relationship for the strategic factor. This is an extremely interesting fact. Customers are perceived as an important source of knowledge, as they often possess insights into competitors' activities, a comprehensive overview of available market offerings, and firsthand experience working with other entities. Acquiring this knowledge, it seems, should be a normal part of employee-customer interactions, and managers should strive to utilize this knowledge in a broad perspective of managerial decisions, especially in those of a strategic nature.

The study conducted has a key limitation: the purposive selection of respondents. This means that the research results cannot be extended to the entire population of managers of small and medium-sized enterprises in Poland. This can only be done for the surveyed group of respondents.

However, this limitation also presents an opportunity to design and conduct further research. Research can be designed to account for industry diversity. This could reveal possible differences between industries in the scope of the research problem discussed, depending on the intensity and frequency of contacts with customers. It should also be noted that adopting the perspective of small and medium-sized enterprises operating for up to 5 years provides an opportunity to deepen and explain the causes of the inverse relationship between the variables and the factor expressing strategic aspects. The role that managers or owners of these enterprises play in these initial periods, in developing a specific vision of business expansion and how this translates into the use of employees' knowledge in operational and strategic dimensions, may be a field for exploration and explanation. This research project could also include an attempt to determine whether only behavioral issues related to owners and managers would play a decisive role in this perspective, or, as the published research findings indicate, whether this issue would be at least partially related to the company's infrastructure and procedural solutions (and how to possibly expand and improve them).

References

1. Abrokwah-Larbi, K. (2024). The impact of customer-focus on the performance of business organizations: evidence from SMEs in an emerging West African economy. *African Journal of Economic and Management Studies*, *Vol. 15, Iss. 1,* 31-59. https://doi.org/10.1108/AJEMS-04-2022-0167
2. Andriessen, D.G. (2008). Stuff or love? How metaphors direct our efforts to manage knowledge in organisations. *Knowledge Management Research & Practice*, *Vol. 6, Iss. 1,* 5-12. https://doi.org/10.1057/palgrave.kmrp.8500169
3. Baena-Luna, P., Martínez-Román, J.A., Liñán, F. (2022). Corporate Entrepreneurship Strategy and Internationalization: A Literature Review. In: Faghih, N., Forouharfar, A. (Eds.), *Strategic Entrepreneurship. Contributions to Management Science*. Cham: Springer, 143-160. https://doi.org/10.1007/978-3-030-86032-5_7
4. Balau, G., Van der Bij, H., Faems, D. (2020). Should SMEs get out of the building? Examining the role of customer co- creation on radical organizational creativity. *R&D Management*, *Vol. 50, Iss. 4*, 535-547. https://doi.org/10.1111/radm.12403
5. Bolisani, E., Scarso, E. (2016). Factors affecting the use of wiki to manage knowledge in a small company. *Journal of Knowledge Management*, *Vol. 20, Iss. 3*, 423-443. https://doi.org/10.1108/JKM-05-2015-0205
6. Centobelli, P., Cerchione, R., Esposito, E. (2018). How to deal with knowledge management misalignment: A taxonomy based on a 3D fuzzy methodology. *Journal of*

Knowledge Management, *Vol. 22, Iss. 3,* 538-566. https://doi.org/10.1108/JKM-10-2016-0456

7. Dalkir, K. (2005). *Knowledge management in theory and practice*. Oxford: Routledge. https://doi.org/10.4324/9780080547367
8. Davenport, T.H., De Long, D.W., Beers, M.C. (1998). Successful knowledge management projects. *MIT Sloan Management Review, Vol. 39, Iss. 2*, 43-57.
9. De Jong, A., Zacharias, N.A., Nijssen, E.J. (2021). How young companies can effectively manage their slack resources over time to ensure sales growth: the contingent role of value-based selling. *Journal of the Academy of Marketing Science*, *Vol. 49, Iss. 2*, 304-326. https://doi.org/10.1007/s11747-020-00746-y
10. Dong, J., Lai, X., Zhao, D. (2022). How incentive affects knowledge transfer performance in corporate user community: The mediating roles of users' transfer willingness and ability. *Managerial and Decision Economics*, *Vol. 43, Iss. 6,* 2249-2260. https://doi.org/10.1002/mde.3522
11. Dous, M., Salomann, H., Kolbe, L., Brenner, W. (2005). Knowledge management capabilities in CRM: Making knowledge for, from, and about customers work. *AMCIS 2005 Proceedings*, *Vol. 33*, 167-178.
12. Durst, S., Zieba, M. (2020). Knowledge risks inherent in business sustainability. *Journal of Cleaner Production*, *Vol. 251*, 119670. https://doi.org/10.1016/j.jclepro.2019.119670
13. Durst, S., Foli, S., Edvardsson, I.R. (2024). A systematic literature review on knowledge management in SMEs: current trends and future directions. *Management Review Quarterly*, *Vol. 74, Iss. 1*, 263-288. https://doi.org/10.1007/s11301-022-00299-0
14. Egwunatum, S.I., Oboreh, J.C. (2022). Factors Limiting Knowledge Management among Construction Small and Medium Enterprises. *Journal of Engineering, Project, and Production Management*, *Vol. 12, Iss. 1,* 25-38. https://doi.org/10.32738/JEPPM-2022-0003
15. Esfandyarpour, A., Arasti, M.R., Farazi, M.S., Miremadi, I. (2024). From depth and breadth of knowledge to technological capability: a journey inside a firm's intellectual capital. *R&D Management*, *Vol. 54, Iss. 4*, 864-881. https://doi.org/10.1111/radm.12669
16. Hariputra, A., Koestiono, D., Muhaimin, A.W. (2024). Mediation of knowledge sharing and commitment in the relationship of transformational leadership on SMEs' performance. *Journal of System and Management Sciences*, *Vol. 13, Iss. 1*, 511-531. https://doi.org/10.33168/JSMS.2023.0127
17. Hörisch, J., Johnson, M.P., Schaltegger, S. (2015). Implementation of sustainability management and company size: a knowledge- based view. *Business Strategy and the Environment, Vol. 24, Iss. 8,* 765-779. https://doi.org/10.1002/bse.1844
18. Kianto, A., Ritala, P., Spender, J.C., Vanhala, M. (2014). The interaction of intellectual capital assets and knowledge management practices in organizational value creation.

Journal of Intellectual Capital, Vol. 15, Iss. 3, 362-375. https://doi.org/10.1108/JIC-05-2014-0059

19. Komańda, M., Sowa, M. (2016). Zarządzanie wiedzą klientów w przedsiębiorstwie w opinii menedżerów i pracowników. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, *No. 202*, 78-89.
20. Lettner, N., Wilhelm, S., Güldenberg, S., Güttel, W. (2022). Customers as knowledge partners in a digital business ecosystem: From customer analytics towards knowledge partnerships. *Journal of Digital Economy*, *Vol. 1, Iss. 2,* 130-140. https://doi.org/10.1016/j.jdec.2022.08.001
21. Lis, M., Kotelska, J. (2023). Knowledge-based inter-organizational cooperation of universities and businesses in the chemical sector. *Zeszyty Naukowe. Organizacja i Zarządzanie*, *No. 172.* Politechnika Śląska*,* 417-450. http://dx.doi.org/10.29119/1641-3466.2023.172.26
22. Liu, H., Chai, K.H., Nebus, F.J. (2013). Balancing codification and personalization for knowledge reuse: a Markov decision process approach. *Journal of Knowledge Management*, *Vol. 17, Iss. 5*, 755-772. https://doi.org/10.1108/JKM-04-2013-0127
23. Magni, D., Chierici, R., Fait, M., Lefebvre, K. (2022). A network model approach to enhance knowledge sharing for internationalization readiness of SMEs. *International Marketing Review*, *Vol. 39, Iss. 3,* 626-652. https://doi.org/10.1108/IMR-03-2021-0110
24. Martinez-Conesa, I., Soto-Acosta, P., Carayannis, E.G. (2017). On the path towards open innovation: Assessing the role of knowledge management capability and environmental dynamism in SMEs. *Journal of Knowledge Management*, *Vol. 21, Iss. 3*, 553-570. https://doi.org/10.1108/JKM-09-2016-0403
25. Michna, A. (2023). Organizational knowledge: definitions, taxonomies, and metaphors in a digital transformation environment. *Scientific Papers of Silesian University of Technology. Organization & Management*, *No. 190*, 95-107, http://dx.doi.org/10.29119/1641-3466.2023.190.7
26. Mohammed, F., Ahmad, R.B., Hassan, S.B., Fazea, Y., Alzahrani, A.I. (2024). An empirical evidence on the impact of social customer relationship management on the small and medium enterprises performance. *International Journal of Information Management Data Insights*, *Vol. 4, Iss. 2,* 100248. https://doi.org/10.1016/j.jjimei.2024.100248
27. Murray, G.C. (2007). Venture capital and government policy. In: H.E. Landström (Ed.), *Handbook of Research on Venture Capital* (pp. 113-152). Elgar Publishing, https://doi.org/10.4337/9781847208781.00011
28. Narayanan, S., Nadarajah, D., Sambasivan, M., Ho, J.A. (2023). Antecedents and outcomes of the knowledge management process (KMP) in Malaysian SMEs. *Journal of Small Business & Entrepreneurship*, *Vol. 35, Iss. 5,* 697-723. https://doi.org/10.1080/08276331.2020.1818540

29. Nicolò, D. (2015). Towards a theory on corporate reputation and survival of young firms. *Procedia Economics and Finance, Vol. 22*, 296-303. https://doi.org/10.1016/S2212-5671(15)00289-0
30. Nieć, M. (2025). Ranking małej i średniej przedsiębiorczości w układzie wojewódzkim. Wskaźnik syntetyczny. In: A. Skowrońska, A. Tarnawa (Eds.), *Raport o stanie sektora małych i średnich przedsiębiorstw w Polsce* (pp. 33-39). Warszawa: Polska Agencja Rozwoju Przedsiębiorczości.
31. Okere, G. (2017). Barriers and enablers of effective knowledge management: A case in the construction sector. *Electronic Journal of Knowledge Management*, *Vol. 15, Iss. 2,* 85-97.
32. Olan, F., Liu, S., Neaga, I., Alkhuraiji, A. (2016). How knowledge sharing and business process contribute to organizational performance: Using the fsQCA approach. *Journal of Business Research*, *Vol. 69, Iss. 11*, 5222-5227. https://doi.org/10.1016/j.jbusres.2016.04.116
33. Oliva, F.L., Kotabe, M. (2019). Barriers, practices, methods and knowledge management tools in startups. *Journal of Knowledge Management*, *Vol. 23, Iss. 9,* 1838-1856. https://doi.org/10.1108/JKM-06-2018-0361
34. Parhankangas, A. (2007). An Overview of Research on Early Stage Venture Capital: Current Status and Future Directions. In: H.E. Landström (Ed.), *Handbook of Research on Venture Capital* (pp. 253-280). Elgar Publishing. https://doi.org/10.4337/9781847208781.00018
35. Pattinson, S., Preece, D. (2014). Communities of practice, knowledge acquisition and innovation: a case study of science-based SMEs. *Journal of Knowledge Management*, *Vol. 18, Iss. 1*, 107-120. https://doi.org/10.1108/JKM-05-2013-0168
36. *Przeżywalność firm w Polsce rośnie. Kluczowy jest trzeci rok działalności* (2016). Controlling. Rachunkowość zarządcza i finanse. Retrieved from: https://www.controllingirachunkowosc.pl/aktualnosci/przezywalnosc-firm-w-polsce-rosnie-kluczowy-jest-trzeci-rok-dzialalnosci, 20.02.2026.
37. Riege, A. (2005). Three- dozen knowledge- sharing barriers managers must consider. *Journal of Knowledge Management*, *Vol. 9, Iss. 3,* 18-35. https://doi.org/10.1108/13673270510602746
38. Sandberg, S. (2014). Experiential knowledge antecedents of the SME network node configuration in emerging market business networks. *International Business Review*, *Vol. 23, Iss. 1,* 20-29. https://doi.org/10.1016/j.ibusrev.2013.08.001
39. Scheepers, R., Venkitachalam, K., Gibbs, M.R. (2004). Knowledge strategy in organizations: refining the model of Hansen, Nohria and Tierney. *The Journal of Strategic Information Systems*, *Vol. 13, Iss. 3,* 201-222. https://doi.org/10.1016/j.jsis.2004.08.003
40. Taghizadeh, S.K., Karini, A., Nadarajah, G., Nikbin, D. (2020). Knowledge management capability, environmental dynamism and innovation strategy in Malaysian firms.

Management Decision, *Vol. 59, Iss. 6,* 1386-1405. https://doi.org/10.1108/MD-01-2020-0051

41. Tokarz, M., Rosiński, J. (2024). Transfer of tacit knowledge: exploring effective methods and techniques of tacit knowledge across generations in cultural institutions – a case study. *Scientific Papers of Silesian University of Technology. Organization & Management*, *No. 199,* 619-631, http://dx.doi.org/10.29119/1641-3466.2024.199.46
42. Ujwary-Gil, A. (2011). The analysis of barriers of knowledge management. In: A. Nalepka, A. Ujwary-Gil (Eds.), *Business and non-profit organizations facing increased competition and growing customers' demands* (pp. 84-100). Nowy Sącz: Wyższa Szkoła Biznesu National Louis University.
43. Whelton, M., Ballard, G., Tommelein, I.D. (2003). A knowledge management framework for project definition. *Journal of Information Technology in Construction (ITcon)*, *Vol. 7, Iss. 13*, 197-212.
44. Xuan, V. (2020). Factors affecting knowledge sharing in enterprises: Evidence from small and medium enterprises in Vietnam. *Management Science Letters*, *Vol. 10, Iss. 2*, 469-478. http://dx.doi.org/10.5267/j.msl.2019.8.023
45. Yoon, S., Kim, G., Chung, Y., Son, H. (2023). Is customer involvement always beneficial for R&D efficiency? The difference between high-tech and low-tech industries. *Managerial and Decision Economics*, *Vol. 44, Iss. 3,* 1678-1688. https://doi.org/10.1002/mde.3775
46. Zakrzewski R., Tarnawa A., Orłowska J., Nieć M. (2025). Obraz statystyczny przedsiębiorstw w Polsce. In: A. Skowrońska, A. Tarnawa (Eds.), *Raport o stanie sektora małych i średnich przedsiębiorstw w Polsce* (pp. 11-32). Warszawa: Polska Agencja Rozwoju Przedsiębiorczości.
47. Zhou, H., Uhlaner, L.M., Jungst, M. (2023). Knowledge management practices and innovation: A deliberate innovation management model for SMEs. *Journal of Small Business Management*, *Vol. 61, Iss. 4,* 2126-2159. https://doi.org/10.1080/00472778.2021.1888383
48. Zwierzchowski, D. (2023). The importance of knowledge transfer in the implementation of an integrated ERP system. *Scientific Papers of Silesian University of Technology. Organization & Management*, *No. 186,* 771-779. http://dx.doi.org/10.29119/1641-3466.2023.186.55