

Celina Sołek-BorowskaSzkoła Główna Handlowa w Warszawie
e-mail: csolek@sgh.waw.pl

**KNOWLEDGE SHARING PROCESSES
IN SMALL AND MEDIUM ENTERPRISES**

**PROCESY DZIELENIA SIĘ WIEDZĄ
W MAŁYCH I ŚREDNICH PRZEDSIĘBIORSTWACH**

DOI: 10.15611/ie.2017.2.09

Summary: The focus of this paper is to analyze knowledge sharing processes in small and medium enterprises through a knowledge management perspective in order to further the understanding what tools small and medium enterprises operating in the Polish market use to share knowledge. Modern IT tools are used by only 30% of small and medium enterprises. The most often used tool is email, as confirmed by 88% of respondents. Knowledge sharing processes are vital to knowledge management initiatives of companies that operate in a changing environment and depend on innovation to gain a competitive advantage. Previous research on knowledge management in small and medium enterprises has shown many differences compared to larger firms. SMEs tend to place more emphasis on the management of tacit knowledge than larger firms, and communication channels in SMEs are more likely to be between firms, rather than internal to the organization. Therefore in the following study, a thorough investigation of tools for knowledge sharing is presented. This research attempts to fulfill the knowledge sharing processes gap between small and medium enterprises in the Polish context where traditionally large firms are mainly investigated.

Keywords: knowledge sharing, small and medium enterprises, knowledge management system.

Streszczenie: Celem artykułu jest analiza procesów dzielenia się wiedzą w małych i średnich przedsiębiorstwach w perspektywie zarządzania wiedzą. Jego osiągnięcie pozwoli wskazać, jakie narzędzia działające na polskim rynku małe i średnie przedsiębiorstwa wykorzystują do dzielenia się wiedzą. Nowoczesne narzędzia informatyczne są stosowane tylko przez 30% małych i średnich przedsiębiorców. Najczęściej wykorzystywanym narzędziem jest e-mail. Proces dzielenia się wiedzą ma kluczowe znaczenie dla inicjatyw zarządzania wiedzą w firmach funkcjonujących w zmieniającym się środowisku i uzależnionych od innowacji niezbędnej do uzyskania przewagi konkurencyjnej. Poprzednie badania dotyczące zarządzania wiedzą w małych i średnich przedsiębiorstwach wykazały wiele różnic w porównaniu z dużymi firmami. Małe i średnie przedsiębiorstwa zazwyczaj kładą większy nacisk niż większe firmy na zarządzanie wiedzą ukrytą, a kanały komunikacji w małych i średnich przedsiębiorstwach częściej mają miejsce między firmami, a nie wewnątrz organizacji. Dlatego w artykule przedstawiono narzędzia do dzielenia się wiedzą. Uzasadnieniem podjęcia badań jest próba wypełnienia luki badawczej w obszarze procesów dzielenia się wiedzą

w kontekście małych i średnich przedsiębiorstw funkcjonujących na rynku polskim, gdyż główny nurt badawczy w obszarze procesów dzielenia się wiedzą jest analizowany przede wszystkim w dużych przedsiębiorstwach.

Słowa kluczowe: procesy dzielenia się wiedzą, małe i średnie przedsiębiorstwa, system zarządzania wiedzą.

1. Introduction

Knowledge has become an essential source of value generation and the sustainability of organizations' competitive advantage [Teece 2005; Nonaka, Takeuchi 1995]. Firms that develop and leverage knowledge resources achieve greater success than firms who are more dependent on tangible resources [Autio, Sapienza, Almeida 2000]. Knowledge management is increasingly becoming an integral business function for many companies as they realize that organizational competitiveness hinges on the effective management and creation of knowledge [Grover, Davenport 2001; Randeree 2006]. Accordingly, firms must find ways to adequately manage knowledge. This presents a challenge for smaller firms as they usually lack the suitable resources in order to make full usage of their knowledge stock. Under such conditions this knowledge stock is particularly at risk in situations of staff turnover and/or long-term absentees creating difficulties for immediate staff replacement [Desouza, Awazu 2006].

How to effectively share knowledge within organizations has been given a great deal of attention in the practice of business management, but not enough attention has been devoted to knowledge sharing processes in the context of small and medium enterprises.

Although the sharing of knowledge among organizational employees is encouraged [Jasimuddin, Zhang 2011], knowledge sharing is not straightforward. For example, tacit knowledge is more difficult to share than explicit knowledge which can be easily disseminated to a large number of people [Ling, Sandhu, Jain 2009; Jasimuddin et al. 2005].

The reasons for selecting a Polish sample of small and medium enterprises are three-fold. First, small and medium enterprises in Poland generate 50.01% of GDP. Several studies also argue that small and medium enterprises (SMEs) are the engine of economic growth in the industrialised world.

Second, Poland is in 6th position amongst EU countries to have a large number of SME companies – about 69.2%. Third, most research is devoted to large companies mainly with foreign capital where knowledge management systems are implemented according to the headquarters' plans with no room for improvement [Polish Agency of Entrepreneurship Development 2016].

Previous research on KM in SMEs has shown many differences compared to larger firms. SMEs tend to place more emphasis on the management of tacit

knowledge than larger firms, and communication channels in SMEs are more likely to be between firms, rather than internal to the organization. The SME sector appears to be less advanced in terms of knowledge construction, having a more mechanistic approach to this concept and relying less on social interaction [Durst, Edvardsson 2012]. Serenko [2013, p. 792] concurs that “KM in small and medium enterprises is (...) one of a list of several important topics that have not received sufficient attention in previous KM research.”

Therefore the objective of the paper is to investigate what tools small and medium enterprises are using for knowledge sharing processes.

The next section provides a brief overview of the knowledge sharing processes. It is continued by explaining the research methodology adopted in this study. An in-depth analysis of findings follows. The paper concludes with a detailed discussion of the results in the light of extant literature and the presentation of avenues for future research.

2. Knowledge sharing – literature review

Knowledge sharing (KS) is a critical behavior in knowledge-based organizations and, therefore, a crucial element of knowledge management (KM). The organization is reliant on the effective utilization of its collective knowledge pool, particularly its knowledgeable employees, which is why KS is a highly desirable behavior from an organizational perspective [Cabrera, Cabrera 2005; Ipe 2003].

The knowledge sharing process is regarded as the main knowledge management area. Its importance is related to the fact that there is a link between the level of individual knowledge – the employees who have it and the level of the organization, i.e. where knowledge has been acquired in terms of its economic and competitive value. While the process of knowledge sharing is treated as an important pillar of knowledge management, practice shows that the process of sharing knowledge often turns out to be a significant barrier. Knowledge sharing is the process by which individuals share explicit and tacit knowledge, and work together to create new knowledge. This process is essential in transforming individual knowledge into organizational knowledge. This is obviously conditioned by its effectiveness in different parts of the organization, which can be strengthened when people pass on information, good practices, tips, experiences and lessons learnt. On the other hand, for individuals in a highly competitive environment, sharing knowledge means that individual knowledge is being disseminated to others, and those in turn can be competitors now or in the near future. This is the dilemma faced by an individual employee while analyzing individual benefits and organizational benefits.

An organization's KM capacity has been shown to have a positive impact on the organization's performance, thus requiring strategic management [Chen, Fong 2015].

Technology and information systems play a critical role in enhancing the organization's KM capacity and the success of the KM initiatives [Edwards et al. 2005].

The knowledge technology infrastructure refers to the hardware infrastructure, software and other electronic tools that can enhance KM processes [Al-Aama 2014]. Examples of knowledge technology could include Web 2.0 technologies, webinars, groupware, knowledge repositories, data warehouses and data marts, as well as other electronic communication tools that further enable employees to interact and collaborate regardless of their geographical location [Intezari, Taskin, Paullen 2016].

3. Methodology

The results discussed in this paper are taken from a broader research that was carried out by the Institute of Management School of Economics in Warsaw, Poland in 2016 on 153 entities representing small and medium-sized companies. The main aim of the research was to identify what type of knowledge management systems exist in small and medium-sized enterprises. However, the results presented in this paper focus on determining what tools small and medium sized enterprises use in knowledge sharing knowledge using the same data.

Prior to the main study, a pilot study was undertaken which helped with refining data collection plans with respect to both the contents of the data and the procedure to be followed.

Table 1. Features of investigated companies ($N = 153$)

Enterprise	N	in %
Type of activity		
Production	75	49
Trade	41	27
Services	37	24
Form of ownership		
Ltd.	122	80
Joint stock company	21	14
Sole proprietor	10	6
Type of capital		
Majority of Polish capital	135	88
Majority of foreign capital	18	12
Scope of activity		
International	77	50
National	63	41
Regional/local	13	9
Number of employees		
10-49 persons	77	50
50-249 persons	76	50

Source: Statutory Research of Management Institute, 2016 year.

Data shown in Table 1 indicate that a balanced sample has been chosen for the research when it comes to the number of employed persons, which was the result of a deliberate selection of respondents. The research sample was dominated by production companies, which accounted for 50% of the surveyed entities. The predominant type of the legal form of business was the limited liability company, which accounted for up to 80% of the respondents. In turn, the companies with a majority Polish capital clearly dominated 88% of the analyzed entities. As for the scope of operation, the companies which accounted for an international scale were 50% of respondents, while 41% were regional.

4. Research findings and analysis

The emergence of new information communication technologies, from simple e-mail to being accessible from anywhere via the Internet and Intranet, more sophisticated audio and video conferencing, common electronic boards or groups established in the network have helped people significantly overcome the distance and time barrier. Technical infrastructure is considered to be an important facilitator in a knowledge-based economy. Such an infrastructure plays an important role in the organization's knowledge management system. To create, use and share new knowledge, the exchange of existing knowledge must be facilitated by the introduction of different technology platforms.

To create knowledge sharing opportunities, an organization must develop a comprehensive IT infrastructure. Knowledge is transferred and created in an organization using technical infrastructure. Technology refers to the infrastructure of tools, systems, platforms and automated solutions that affect the development, use and distribution of knowledge [Chong, Chong, Lin 2010]. These include chat, share point, skype, electronic boards, team viewer and Google platform. Technological platforms can only help to stimulate the flow of knowledge, but their impact on knowledge sharing is less visible without a proper cultural and organizational context in which employees are encouraged to develop and share their knowledge [Clarke, Rollo 2010].

Respondents were asked in which form the knowledge sharing process takes place. The data is presented in Figure 1.

More than half of the surveyed enterprises (55%) use new technologies in the knowledge sharing process. Only every tenth investigated entity has a formal knowledge management system. Regular meetings with employees are organized by 40% of the surveyed entities. New technologies will never facilitate the exchange of information, good communication and knowledge sharing if the culture of knowledge sharing does not exist in the company. Much less popular are meetings with external stakeholders (26%). The results indicate that the external contractor is still treated as a separate entity. The current view is that customers, partners, and the competition can also be a source of inspiration, but this approach is not promoted among SMEs.

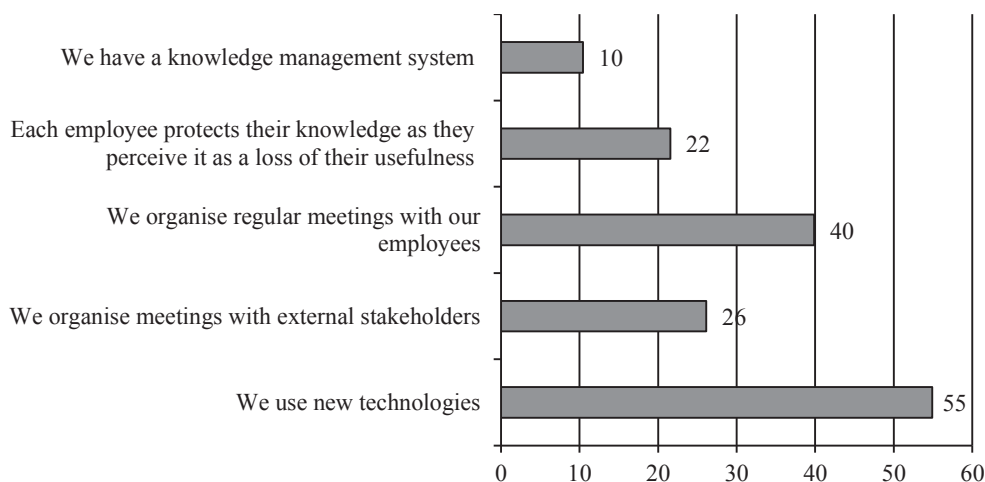


Fig. 1. Forms of knowledge sharing (in %; $N = 153$)

Source: Statutory Research of Management Institute, 2016 year.

The old saying that knowledge is a force, today can be replaced by saying „Knowledge is power, so share it to multiply it” is not a guiding principle among the surveyed SMEs, just over 5, or 22% of the surveyed entities believe that every employee protects their knowledge because they consider it as a loss of their suitability for work.

Moreover, the question which was asked, whether there was significant relationship between the following variables (using new technologies, organizing meetings with external stakeholders, and type of ownership, scope of operation, and company size) was answered. The analyzed variables are of a qualitative character, therefore, chi-square statistic was utilized which enables to show the relations between qualitative variables. The test was conducted assuming $\alpha = 0.05$. The results of the analysis are presented in Table 2.

Table 2. Forms of knowledge sharing tools ($N=153$)

	Ownership capital	Scope of operation	Company size
We use new technologies	0,03785	0,00414	0,16483
We organise meetings with external stakeholders	0,64081	0,11429	0,11095
We organise regular meetings with our employees	0,35004	0,05393	0,08004
Each employee protects their knowledge as they perceive it as a loss of their usefulness	0,02019	0,00044	0,04241
We have got a knowledge management system	0,35942	0,62856	0,10678

Source: Statutory Research of Management Institute, 2016 year.

Research shows that the industry and the form of ownership do not affect the forms of knowledge sharing.

In the case of foreign capital, it affects knowledge sharing with new technologies $p < \alpha$ ($p = 0.03785$). They are more often used by companies with a predominance of foreign capital. In companies with a predominance of Polish capital, workers more often protect their knowledge and keep it to themselves because they perceive it as losing their usefulness in the work of $p < \alpha$ ($p = 0.02109$).

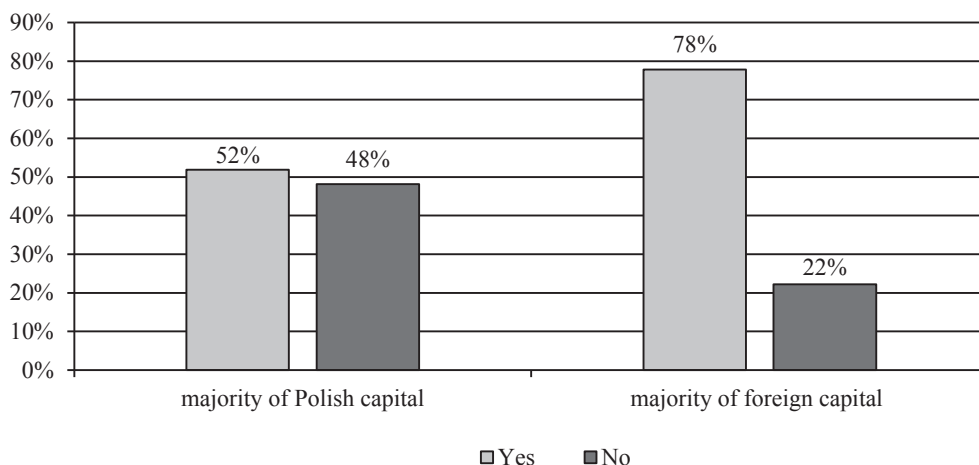


Fig. 2. Using new technology ($N = 153$)

Source: Statutory Research of Management Institute, 2016 year.

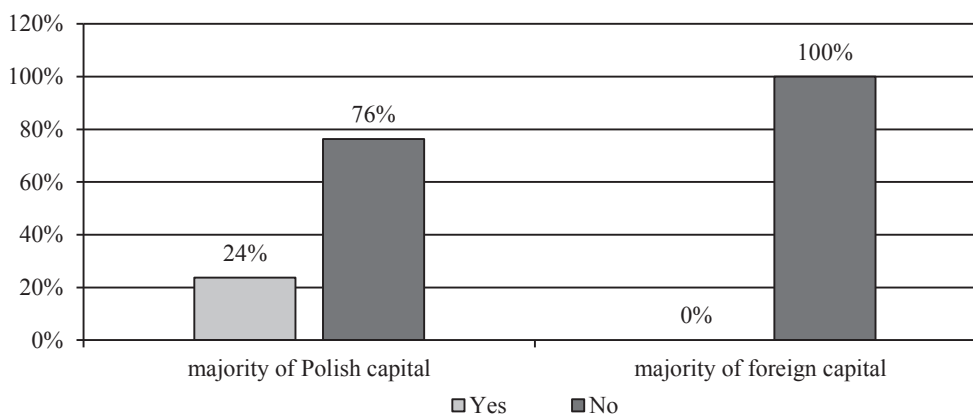


Fig. 3. Each employee protects their own knowledge ($N = 153$)

Source: Statutory Research of Management Institute, 2016 year.

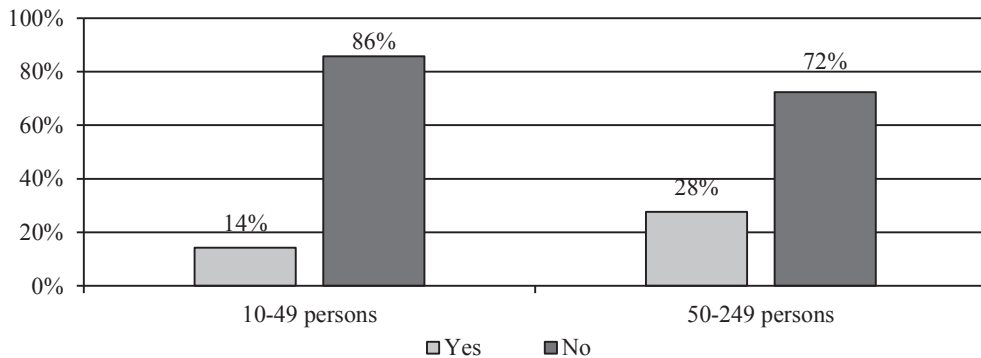


Fig. 4. Each employee protects their knowledge ($N = 153$)

Source: Statutory Research of Management Institute, 2016 year.

The size of the company is also related to the protection of knowledge by their employees, $p < \alpha$ ($p = 0.04241$). More often, employees working in large organization protect their knowledge and keep it for themselves.

Respondents were also asked what tools they usually use to share knowledge. The data is shown in Figure 5.

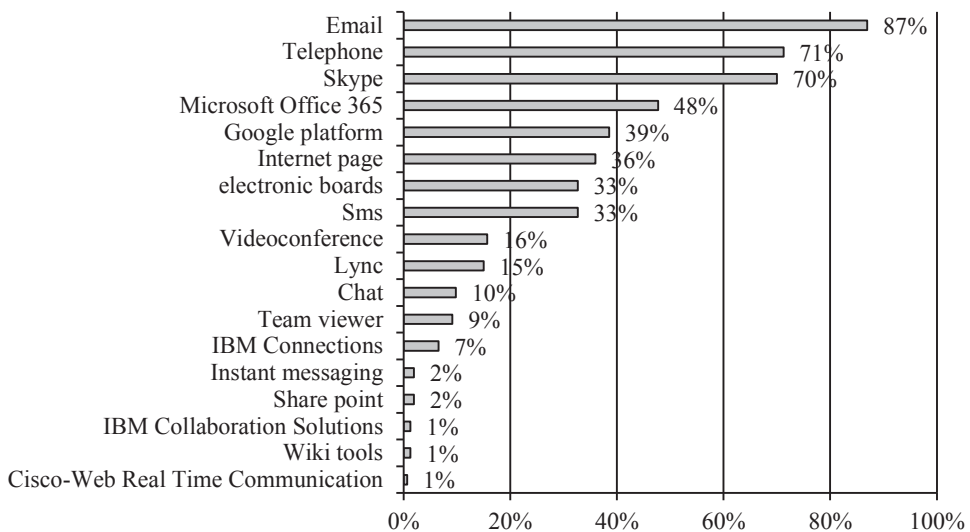


Fig. 5. Tools used for knowledge sharing (in %; $N = 153$)

Source: Statutory Research of Management Institute, 2016 year.

The most popular and widely used instrument in the knowledge sharing process is email, used by 88% of the surveyed companies. We live in modern times when every day each of us is overwhelmed with emails. 77% of respondents are still using the traditional telephone. This may be due to habit, the landline phone is a confirmation of the company's existence. Nowadays there are many platforms through which one can contact a partner, a contractor, or even have the opportunity to see them. In third place, respondents indicated Skype – 69%. Skype offers the opportunity to make free on-line calls for a small fee to make landline calls at home and abroad. Skype's advantage is the ability to make video calls, the ability to split the screen and the ability to chat with several people; it also offers an application that can be installed on mobile devices.

5. Conclusions

Mainstream knowledge management research historically focused on knowledge sharing processes in large organizations [Al Mehairi 2013]. Typically these knowledge sharing processes are supported by knowledge management systems. However, knowledge processes should be regarded as a set of inter-related activities, not a simple combination of individual activities that as a whole is linked to the organizational performance [Intezari, Taskin, Paullen 2017]. In contrast to the general focus on knowledge sharing processes in large organizations, this study focused on knowledge sharing processes in SMEs and tried to identify the various organizational mechanisms and activities they employ to support knowledge sharing processes.

To conclude, the survey found that Polish SMEs belong to the group of turtles, i.e. entities where the use of new technologies is less than 30%. Leading examples of the technologies used are: computer, internet access and the implementation of MS Office and their use is lower than 30%.

SMEs do not have a formal knowledge management system. Only 10% of all surveyed companies in the manufacturing industry have knowledge that is the most valuable element in the production process, most likely it is delivered verbally and a significant part of it is lost in daily operations, as confirmed by the results of the study. Given the ownership criterion, the differences are of one percentage point. On the other hand, it is astonishing that companies from the SME sector with a predominance of foreign capital do not have a knowledge management system.

To summarize the results of research on knowledge sharing processes, it is necessary to state that in order for an organization to have a knowledge sharing process, it is necessary to create the following conditions:

1. Create a culture of knowledge sharing by making a clear distinction between sharing knowledge and practical business goals, problems, or outcomes.
2. It is much more important to match the organization style to existing knowledge sharing artifacts such as events, language and websites.

3. Combine knowledge sharing with company values, as this is a process that is consistent with the expectations of colleagues and managers.

4. Employee networks are one of the key mechanisms for sharing knowledge. To build a knowledge sharing culture, there is a need to strengthen those networks that already exist, providing them with tools and resources.

5. Find people in the organization who already share ideas, comments. Entrepreneurs in the organization and managers should encourage and even push for knowledge sharing practices. Knowledge sharing should be part of employee evaluation. The behavior of others, consistent with the key values, is a strong determinant giving an example to others.

On the country level, recommendations can be made regarding the proposed activities:

- Promoting a culture of innovation.
- Building technological competence among entrepreneurs based on the cooperation of companies, government agencies and scientific units.
- Incorporation of technology into the curriculum at all stages of education and vocational activation programs.
- Development of the highest quality transmission infrastructure (especially broadband).

Internet access is essential to enable the automation of exchanges of data with companies and external organizations, and for the dissemination of modern business models based on modern IT solutions, and therefore support should encompass particularly those regions that are often unattractive to business from the point of view of investing in broadband networks.

The chance to improve the IT sector of SMEs is to support solutions that meet their needs and financial capabilities. Taking these two factors into account, it is worthwhile to support and promote solutions that are tailored to the needs of SMEs and offer innovative models of IT services, making them affordable to SMEs. The promoted solutions should ensure compatibility with other market applications and be compatible with market-standard technical standards.

It is important to support the development of modern IT tools supporting new business models to stimulate the development of SMEs. Many of the emerging companies are based on new business models. In these models, the use of modern IT solutions reduces the amount of effort needed to start a business and reduces some of the costs of running a business. In addition, the use of modern tools for collaboration between companies means that the size of the business is no longer an important factor when deciding whether to start a business.

This study can be further expanded to include a larger sample for to better generalize the results. Cross country comparison might provide interesting insights. Future in-depth research can be carried out on the issues raised in this paper.

Literature

- Al-Aama A.Y., 2014, *Technology knowledge management (TKM) taxonomy*, Vine, vol. 44, no. 1, pp. 2-21.
- Al Mehairi, H., 2013, *Cultural Influences on Knowledge Sharing Behaviours through open Systems Closed System Cultures: The Impact of Organisational Culture on Knowledge Sharing*, Proceedings of the International Conference on Intellectual Capital, Washington, DC, 24-25 October.
- Autio E., Sapienza H.J., Almeida J., 2000, *Effects of age at entry, knowledge intensity and imitability on international growth*, Academy of Management Journal, no. 43 (2), pp. 909-24.
- Cabrera E.F., Cabrera Á., 2005, *Fostering knowledge sharing through people management practices*, The International Journal of Human Resource Management, vol. 16, no. 5, pp. 720-735.
- Chong C.W., Chong S.C., Lin B., 2010, *Organizational demographic variables and preliminary KM implementation success*, Expert Systems with Applications, vol. 37, no. 10, pp. 7243-7254.
- Clarke T., Rollo C., 2001, *Capitalising knowledge: Corporate knowledge management investments*, Creativity and Innovation Management, vol. 10, no. 3, pp. 177-188.
- Desouza K.C., Awazu Y., 2006, *Knowledge management at SMEs: Five peculiarities*, Journal of Knowledge Management, no. 10 (1), pp. 32-43.
- Durst S., Edvardsson I.R., 2012, *Knowledge management in SMEs: A literature review*, Journal of Knowledge Management, no. 16 (6) pp. 879-903.
- Grover V., Davenport T.H., 2001. *General perspectives on knowledge management: Fostering a research agenda*, Journal of Management Information Systems, vol. 18, no. 1, pp. 5-21.
- Intezari I., Taskin N., Paulen D.J., 2017, *Looking beyond knowledge sharing: An integrative approach to management culture*, Knowledge Management, vol. 21, no. 2, pp. 492-515.
- Ipe M., 2003. *Knowledge sharing on organizations: A conceptual framework*, Human Resource Development Review, vol. 2, no. 4, pp. 337-359.
- Jasimuddin S.M., Taskin N., Paulen Klein J.H., Connell C., 2005, *The paradox of using tacit and explicit knowledge: Strategies to face dilemmas*, Management Decision, vol. 43, no.1, pp. 102-112.
- Jasimuddin S.M., Zhang Z., 2011, *Storing transferred knowledge and transferring stored knowledge*, Information Systems Management, vol. 28, no. 1, pp. 84-94.
- Ling C.W., Sandhu M.S., Jain K.K., 2009, *Knowledge sharing in an American multinational company based in Malaysia*, Journal of Workplace Learning, vol. 21, no. 2, pp. 125-142.
- Nonaka I., Takeuchi H., 1995, *The Knowledge-Creating Company*, Oxford University Press, Oxford.
- Polish Agency of Entrepreneurship Development, 2016, *State of small and medium enterprises in Poland*, Warsaw, <https://badania.parp.gov.pl/raport-o-stanie-sektora-msp/stan-sektora-msp-w-pol-sce>.
- Randeree E., 2006, *Knowledge management: Securing the future*, Journal of Knowledge Management, no. 10 (4), pp.145-56.
- Serenko A., 2013, *Meta-analysis of scientometric research of knowledge management: Discovering the identity of the discipline*, Journal of Knowledge Management, no. 17 (5), pp. 773-812.
- Teece D., 2005, *Technology and technology transfer: Mansfieldian inspirations and subsequent developments*, Journal of Technology Transfer, no. 30 (1-2), pp.17-33.