

Knowledge Management and factors influencing its implementation in small KIBS firms – evidence from Poland

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Abstract

Purpose – Even if the notion of knowledge management (KM) has been introduced more than three decades ago, the application of this concept in the context of small firms has still not been sufficiently explored. The relatively few contributions, however, agree on the fact that small companies do not manage knowledge the same way as their larger counterparts. In order to fill this gap, the present paper aims to investigate the if and how different aspects of knowledge management in small enterprises offering knowledge-intensive business services (KIBS) – such as: type of adopted KM practices, barriers to KM implementation and use – are related with some characteristics of the companies such as: their size, the business sector they belong, the kind of adopted strategic knowledge approach followed. Specifically, paper examines some features of KM in companies belonging to various KIBS sectors (ICT, architectural and engineering services, professional services, R&D services and marketing and communication services) in Poland. The findings are based on a quantitative survey conducted among 104 small companies of this type. Investigated KM-related aspects were: the role played by knowledge and KM, the KM practices adopted, the factors that have hindered the adoption of such practices, the way they are used. KIBS companies were investigated because knowledge and its management are vital for their operations and they are perceived as intensive users of KM tools and practices. The findings of the survey show that the approaches to KM followed by small KIBS companies results to be rather differentiated. Concerning the factors that influence the KM approach adopted by the individual company, the size and the kind of followed strategy help in explaining the differences between companies more than the sector of belonging. In particular, the size seems to act as a constraint (in terms of number of adopted practice and of role of promoters) while the kind of strategy as an enabler (a more reflected strategy is connected with a greater number of adopted practices). The study offers food for thought about KM features in the KIBS sector and moreover, it contributes to a better understanding of KM in small enterprises. The knowledge presented in the paper may be of use to managers and owners wishing to better understand their KM practices and implement more suitable solutions.

Keywords – Knowledge Management, KIBS, SMEs, Poland

Paper type – Academic Research Paper

1 Introduction

Although the notion of knowledge management (KM) has been introduced more than three decades ago (Schwartz, 2007), the application of this concept has still not been sufficiently explored with relation to small-sized enterprises (Centobelli et al., 2017; Durst and Edvardsson, 2012; Massaro et al., 2016); furthermore the scarce research currently available on this topic offers rather fragmented results. The relatively few contributions, however, agree on the fact that SMEs do not manage knowledge the same way as their larger counterparts (Chan and Chao, 2008; Wee and Chua, 2013). With the aim to contribute filling this gap, the present paper intends to analyse if and how different aspects of knowledge management in small-sized enterprises are related with some characteristics of the companies such as: the business sector they belong, their size, the kind of strategic approach to managing knowledge they adopt. In particular the paper analyses some aspects related to the way small companies offering knowledge-intensive business services (KIBS) manage their cognitive assets, as follows: the degree of consideration that companies place to their knowledge and its management, the number and kind of implemented KM practices, the barriers they encountered when introducing the practices, the factors that facilitated their adoption, how such practices are used. KIBS companies were selected for a twofold reason. First, as their name recalls, such companies base their competitiveness on knowledge and therefore they must manage it at their best. Second, KIBS companies are very heterogeneous as far as their knowledge bases are concerned (Pina and Tether, 2016), which offers the opportunity to investigate if and how the sector to which the company belongs influences its KM approach.

The paper articulates as follows. Section two briefly summarises extant research about KM approaches and practices with a specific focus on small companies. Section three describes the research methodology and the sample used for the survey, while empirical findings are illustrated and discussed in section four. The last section is devoted to discussion, conclusions, suggestions for future research and limitations of the study.

2 Knowledge management approaches and practices

For some companies, KM can be a deliberate and planned activity; for others, it may *emerge* and develop progressively from the day-by-day practice. It is, therefore, possible to distinguish between two opposite approaches to KM: a *deliberate* or planned approach, and an *emergent* approach. To clarify this distinction, we can refer to the literature of *strategic management*, where we find a similar contrast between a deliberate vs. emergent approach to strategic planning (Mintzberg and Waters, 1985). Deliberate strategic planning refers to an explicit and rational formulation of goals, plans and means that originates from precise intentions of the company. All is generally decided by the central management, progressively articulated in tasks for different parts of the organization, and backed up by formal controls, in a top-down logic. Conversely, a purely emergent approach to strategic planning is one where actions result to be consistent only over time, but in the absence of clear intentions, leadership, and rational predefinition of goals and plans. In other words, in an emergent approach, goals and plans of a company may even be established initially, but in the end, it is only the results of emerging actions and decisions that lead to an ex-post formalization and co-ordination of those actions and decisions that have proven to be more effective and beneficial to the organization. Maybe, as Mintzberg and Waters (1985) highlight, a purely emergent approach is impossible in real life, but there are situations that are (more or less) close to that abstract definition.

To cite: Zieba, M., Bolisani, E., Scarso, E., Knowledge management and factors influencing its implementation in small KIBS firms – evidence from Poland, IFKAD 2020 Proceedings, 15th International Forum on Knowledge Assets Dynamics, pp. 822-832.

In accordance with the mentioned literature, we can introduce the two different definitions of deliberate and emergent KM approach (Zieba et al., 2016):

A deliberate or planned KM approach is an approach where practices, tools and methods of managing knowledge are linked to the general strategic orientation of the company and are deliberately designed at a top management level. KM goals are based on a rational analysis of company's needs, objectives and resources, and are later implemented and spread across the company with deliberate efforts and investments.

An emergent KM approach is an approach where practices, tools and methods of managing knowledge originate from the daily practices and learning processes of company's employees. Employees develop their own methods of learning, storing, retrieving and sharing knowledge in relation to their actual needs and practical problems to solve. The methods and tools that prove to be effective, useful and/or compatible with the daily business practice are later developed and become established practices, and later can be recognized as "the KM approach" of the company.

According to Zieba et al. (2016), companies of small size may especially follow the emergent approach towards KM. As a matter of fact, these companies have less resources to invest systematically in KM plans and appropriate organizational structures for a deliberate KM. Also, their management style is more oriented to flexibility and "entrepreneurial instinct". However, even if we limit the analysis to small companies, their approach is not standardized, and can develop in different forms, depending on the particular condition where they operate. The set of practices, tools, methods, and KM processes can vary from a company to another. This point still deserves to be researched. In particular, there is the need to characterize the possible content of the KM approaches followed by small companies, and to investigate why some companies introduce a certain KM approach. This is the goal of the present study, that aims to contribute filling such research gap by analysing the different KM approaches adopted by a group of small Polish companies.

3 Research methodology and sample

On the basis of what has been presented above, it can be stated that little is still known about the practices related to KM introduced by small companies and the factors potentially influencing their implementation. In order to fill this gap in, the authors of this paper have tried to answer the following research questions:

- Do KM practices implemented by small firms differ in accordance with the sector of the companies? If so, in which way?
- Do KM practices implemented by small firms differ in accordance with the size of the companies? If so, in which way?
- Do KM practices implemented by small firms differ in accordance with the strategic analysis performed before their implementation by the companies? If so, in which way?

In order to answer these questions, it was necessary to conduct a quantitative study among small firms in Poland. Companies from the KIBS sector were selected as they are knowledge-intensive and knowledge is their crucial resource (Miles, 2005; Miles et al., 1995; Zieba, 2013). Therefore, they naturally need to manage it properly, in accordance with their needs. The companies for the study were selected from the database containing such firms and purchased from a professional company offering data. The survey was distributed among the respondents via two means: a link to an on-line survey and a paper version of the survey sent via traditional post,



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together with the letter inviting to take part in the survey. In total, the survey was sent to 1000 firms via e-mail and 2000 firms via traditional post. The response rate from the e-mail survey was very low, so it was necessary to choose a different approach (traditional post). In total, 104 replied to the survey, which gives the return rate at the level of 3,5%. The study was conducted in two waves: the first one in 2018 and the second one – in 2019. The whole survey was devoted to KM approaches and practices, factors and barriers influencing their implementation, people responsible for KM, etc. In the next section, selected empirical findings (due to paper limits) will be presented, together with the discussion.

4 Empirical findings and discussion

We collected usable questionnaires from 104 small KIBS companies (i.e. with 50 or less employees), whose composition is shown in table 1. The sample is rather balanced in terms of sectoral and size composition, with the exception of professional services companies that are the 40% of the observed companies.

Table 1: Sample composition by company size and sector of belonging

	0 - 4	5-10	>10	Total
ICT	7	2	6	15
R&D	0	5	7	12
Technical	9	6	8	23
Professional	15	16	11	42
Marketing	8	1	3	12
Total	40	29	35	104

The surveyed companies have a relevant business history: only 11 have been active from 5 years or less (Table 2), and the average age of the sample is about 19 years. Hence, they have a consolidated experience which contributes to increase the significance of their responses.

Table 2: Sample composition by company age

Age	# companies
0 – 5	11
5 – 10	12
11 - 20	30
> 20	50
n. a.	1

The role played by the respondents further contribute such a significant: indeed, most of them are company owners or people occupying an executive/managerial position (table 3).

Table 3: Sample composition by role of respondent

Role	# companies
Owner	65
Board member	17
Manager	13

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Specialist	9
Total	104

Coming to the analysis of the collected data, it must be recalled that for reason of space in the following pages only data concerning the KM-related practices applied by companies are analysed, linking them to the sector of belonging, the size and the fact that the introduction of the practices was preceded or not by a strategic analysis of the knowledge-related problems of the company. At this regard, we have subdivided companies in three groups as follows: the first group includes companies that definitely (or almost definitely) did not make such analysis (and are indicated with “N”) and represents around 23% of the sample; the second group includes companies that made some analysis but only partially (indicated with “I”) and represents around 32% of the sample; and the third group contains companies that that definitely (or almost definitely) made such analysis (indicated with “Y”) and represents around 45% of the sample. With reference to the literature about KM strategies, it can be said that companies of the first and the second group follow an emergent KM strategy and those of the third group a deliberate KM strategy. The composition of the sample confirms that among small companies, emergent strategies are more diffused than deliberate, also in the case of KIBS firms (Coyte et al., 2012; Wee and Chua, 2013). This implies that in most companies the introduction of K-related practices is the result of the necessity of satisfying working needs.

To begin with, it is worth noting that the sampled companies on the whole agree on considering knowledge as their most important competitive resources, which confirms previous studies about the role that such asset play for the competitiveness of the KIBS sector (Palacios-Marques et al., 2011; Lara et al., 2012; Mangiarotti, 2012). Furthermore, as it was logical to expect, responses indicate that companies with a deliberate KM strategy assign to knowledge a bigger competitive relevance in comparison with companies following an emergent KM strategy.

Table 4: KM-related practices applied by the company (average % by sector)

	ICT	R&D	Tech.	Prof.	Mktg	Total
Capturing and storing K in repositories or written documents	66.7	66.7	65.2	78.6	58.3	70.2
Email to share and transfer K	86.7	91.7	73.9	83.3	91.7	83.7
Social media to publish and access information	40.0	66.7	30.4	47.6	91.7	50.0
Building and maintaining employees’ expertise and skills	60.0	66.7	82.6	85.7	75.0	77.9
Identifying and disseminating best practices	60.0	58.3	60.9	57.1	66.7	59.6
Creating a supportive environment for K sharing	66.7	66.7	34.8	50.0	58.3	51.9
Rewarding employees who share K	53.3	58.3	43.5	40.5	50.0	46.2
Organizing regular meetings to exchange information	53.3	83.3	52.2	61.9	75.0	62.5
Using ERP or CRM software as learning tools	40.0	50.0	26.1	21.4	33.3	29.8
Using communities of practitioners to share K	26.7	25.0	39.1	57.1	25.0	41.3
TOTAL (average number of adopted practices)	5.53	6.33	5.09	5.83	6.25	5.73

One of the survey’s question asked respondents to indicate which KM-related practices (among ten listed) the company are using. As it can be seen in table 4, the surveyed companies on average use less than 6 practices each one. Some practices are widely diffused (particularly email that is used to share and transfer technical and market knowledge by 83.7% of the companies), while others are rarely used (as ERP and CRM). Furthermore, table 4 groups the answer by sector: each value represents the percentage of the companies of the sector that are using the



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individual practice; the last row shows the average number of practices employed by a sector. Data denote the existence of significant differences between sectors: R&D companies are the most intense users of the practices, while ICT the least intense ones. This fact is quite surprising (there is a general opinion that ICT companies are at the forefront in managing knowledge assets) but it can be partially explained by looking at the single practices and taking into account that the use of a specific practice can be affected by the kind of knowledge base that denote each sector. For instance, marketing services companies make relatively little use of repositories, and this is congruent with the symbolic/cultural nature of their knowledge base; completely different is the case of professional service companies, that make use of administrative (document-based) knowledge. Similarly, the intense use of communities of practitioners by professional services companies can find reason in that they are more used to resort to professional associations (Hinings et al., 2016).

Table 5: KM-related practices applied by the company (% by size)

	0 - 4	5-10	>10	Total
Capturing and storing K in repositories or written documents	62.5	65.5	82.9	70.2
Email to share and transfer K	80.0	82.8	88.6	83.7
Social media to publish and access information	45.0	55.2	51.4	50.0
Building and maintaining employees' expertise and skills	70.0	86.2	80.0	77.9
Identifying and disseminating best practices	50.0	62.1	68.6	59.6
Creating a supportive environment for K sharing	37.5	51.7	68.6	51.9
Rewarding employees who share K	37.5	48.3	54.3	46.2
Organizing regular meetings to exchange information	52.5	62.1	74.3	62.5
Using ERP or CRM software as learning tools	22.5	20.7	45.7	29.8
Using communities of practitioners to share K	37.5	55.2	34.3	41.3
Total (average number of adopted practices)	4.95	5.90	6.49	5.73

As regards the number of applied practices, size results to be a very good explanatory factor: micro companies use less practices than the biggest ones (table 5). Only the use of communities of practitioners of practices diverges from this trend, but this is due to the fact that professional services firms (which make intense use of such communities) represent more than half of the “medium-sized” companies.

Table 6: KM-related practices applied by the company (% by strategic approach)*

	N	I	Y	Total
Capturing and storing K in repositories or written documents	68.2	56.7	79.1	69.5
Email to share and transfer K	81.8	80.0	86.0	83.2
Social media to publish and access information	40.9	43.3	62.8	51.6
Building and maintaining employees' expertise and skills	54.5	86.7	81.4	76.8
Identifying and disseminating best practices	27.3	60.0	72.1	57.9
Creating a supportive environment for K sharing	36.4	50.0	55.8	49.5
Rewarding employees who share K	18.2	60.0	51.2	46.3
Organizing regular meetings to exchange information	45.5	60.0	69.8	61.1
Using ERP or CRM software as learning tools	18.2	33.3	32.6	29.5
Using communities of practitioners to share K	27.3	36.7	51.2	41.1
Total (average number of adopted practices)	4.18	5.67	6.42	5.62

* Only 95 respondents

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The results of table 6 confirm that the kind of KM strategic approach followed by a company is strictly connected with the effort it makes in managing knowledge. Actually, companies that have made a strategic analysis before introducing a KM-related practice are those that are applying more practices.

The last two aspects presented in this paper regard how the practices were introduced and who were the key promoters of the introduction.

Table 7: Introduction of practice (average by size)

	0 - 4	5 - 10	>10	Total
Practices were introduced after a strategic analysis of k needs (1 = definitely no – 5 = definitely yes)	2.87	3.77	3.35	3.27
Key promoters (1 = only employees – 5 = only managers/owners)	4.28	4.21	3.52	4.01

Findings of table 7 are as expected. Given the limited size of the sampled companies the key promoters could be especially executive/owners. It is also obvious that the role of employees increases with the dimension. Similarly, it is quite obvious that micro firms are those that more frequently adopt an emergent KM strategy. Furthermore, they are especially micro companies that follow an emergent strategy.

Table 8: Introduction of practice (average by sector)

	ICT	R&D	Tech.	Prof.	Mktg	Total
Practices were introduced after a strategic analysis of k needs (1 = definitely no – 5 = definitely yes)	2.69	2.90	3.99	3.73	3.33	3.27
Key promoters (1 = only employees – 5 = only managers/owners)	3.79	4.00	4.05	4.12	3.83	4.01

Table 8 shows that there are some differences between sectors, that seems to be in line with what previously said about the different cognitive context that denote the various sectors. In particular ICT and Marketing services companies are those where employees play a more active role in promoting the introduction of the practices, which can be ascribed to the fact that in these sectors employees are more familiar with the information-related technologies.

5 Discussion and conclusions

The results of the analysis of the answers given to the questionnaires by the investigated firms allow to answer the research questions posed in section 3. First of all, the findings of the survey show that the approaches to KM followed by small KIBS companies results to be rather differentiated, which confirms previous studies about the fact that a single common way to implement KM cannot be identified (Alexandru et al., 2020). Concerning the factors that influence the KM approach adopted by the individual company, the size and the kind of followed strategy help in explaining the differences between companies more than the sector of belonging. In particular, the size seems to act as a constraint (in terms of number of adopted practice and of role of promoters) while the kind of strategy as an enabler (a more reflected strategy is connected with a greater number of adopted practices).

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Hence, it is possible to say that a deliberate approach towards KM can promote a more thoughtful and intense use of related practices and tools. An interesting result is that the sector of belonging does not seem to be a factor that helps in differentiating the firms' approach, even if it is logical to assume that different knowledge bases imply different ways of managing them. A possible explanation is that knowledge is such a complex matter and there are so many various practices that is difficult to bring everything back to a simple sectorial classification.

5.1 Academic and managerial implications

The study has both academic and managerial implications. As regard the former ones, it confirms the role played by having a deliberate strategy in the shaping the KM activities of a company, also in the case of the smaller ones. This paves the way to further studies aimed at deepening our knowledge about the factors and the conditions that favour the adoption of a deliberate KM strategy by companies of such a very limited size. Concerning the latter ones, our findings suggest that the adoption of KM-related practices should be preceded by a careful reflection about their effective use, which can be really changing for smaller firms, where also owners or managers usually are directly involved in daily business activities.

5.2 Limitations of the study

The study presents some limitations. The first one concerns the sample that is not representative and regards only Polish small KIBS companies: hence the findings of the analysis cannot be generalised to small firms as such. Second, given the preliminary nature of the study, only a very limited part of the questionnaire was analysed, and the responses were not processed by means of specific statistical methods. However, this limitation can be overcome by the performing of a more sophisticated analysis in the future papers. Third, a greater number of factors could be identified and examined in the survey. All these limitations can set the field for the future research avenues and the forthcoming publications.

Acknowledgements

Malgorzata Zieba gratefully acknowledges support from the National Science Centre (Poland) in the context of the research project “Knowledge management strategies and their determinants in companies from the knowledge-intensive business service sector” (No.2016/21/B/HS4/03051).

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