

# Multidimensionality of Knowledge in Strategic Innovation Processes of Enterprises in the Light of Research Results

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**Abstract:** The publication raises the research question: what dimensions of knowledge are significant in strategic innovation processes of enterprises and what implications in this area can be observed in the case of enterprises of the logistics industry. By focusing on the use of the three dimensions of knowledge in the process of building strategic innovation, the strength and direction of the linear relationship between knowledge understood as the company's ability to learn and strategic innovation was examined. In the counterpoint, the attention was drawn to the concept of 'a sustainable enterprise' which integrates knowledge and strategic innovation, providing the framework for the implementation of new solutions. This article is both a theoretical and practical contribution to the research into the determinants of strategic innovation in the context of the company's ability to learn. The empirical research was based on the sample of 100 enterprises belonging to the logistics industry in Poland. The research period was the years of 2020-2021. The applied research methods were critical literature analysis, survey questionnaire and Pearson's correlation analysis. The conclusions from the research suggest that along with an increase in knowledge in the surveyed enterprises there is an increase in innovation strategy in decision-making processes. Moreover, the publication deepens the understanding of various contexts of positive relationships between the three dimensions of knowledge and strategic innovation, which leads to the search for new implications in the changing economic environment. The subject of the significance of knowledge in strategic innovation processes of enterprises is important and up to date since it contributes to the discussion on the extent to which enterprises ought to implement knowledge to gain a competitive advantage.

**Keywords:** knowledge, strategic innovation, enterprise management.

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## 1. Introduction

Nowadays, the innovativeness of enterprises is becoming a factor that dynamizes the situation in the industry or the market sector, thus creating challenges for other market players that must adapt to situations created by innovation. In the Blue Ocean Strategy, W. Chan Kim and R. Mauborgne (2007) underline that innovation is a strategic imperative of the development of modern enterprises. This means that innovation is the basis for making effective decisions aimed at staying at a competitive market. Furthermore, innovation plays an important role in the process of creating value by the enterprise since the company's structure of innovative and competitive potential ought to serve its transformation (Prahalad, Krishnan, 2010).

In this context, building strategic innovation, on the one hand, requires making immediate decisions to maintain a market advantage, on the other, it is a long-term process which covers both technical, technological, product and market areas, implemented on a micro and macro scale. Therefore, the strategic innovation process forces the coordination and integration of knowledge of managers in order to recognize customer preferences, their acquisition, maintenance, market recognition, organization of production process and implementation of innovative technological or product solutions (Bilton, Cummings, 2010).

The concept of strategic innovation directs the attention of managers to the organizational aspect of enterprises related to knowledge, which reflects the company's ability to learn and to shape an intelligent organization. This means that knowledge becomes a critical resource which allows resources to be transformed into key success factors (Cyfert, Krzakiewicz, 2016). Hence the question arises: what dimensions of knowledge are significant in strategic innovation processes of enterprises and what implications in this area can be observed in the case of logistics industry companies? In order to answer the research questions, the objective of the study was to investigate the strength and direction of the linear relationship between knowledge understood as the company's ability to learn and strategic innovation. The ability to use knowledge by the company's managers can be a source of increased effectiveness of innovative processes in the long term. Therefore, it is worth taking a closer look at the concept of strategic innovation, the effect of which should be knowledge built on the basis of the observation of socio-economic phenomena, reflected in the efficiency of the use of intellectual capital which is the rooting system of the enterprise.

## **2. The use of knowledge in the process of building strategic innovation**

Strategic innovation is defined as such a transformation and reformulation of the company's strategy, which, through the commercialization of innovation, enables the creation of new value for both customers and the enterprise (Johnston Jr, Bate, 2007). Strategic innovation processes are long-term in nature, therefore they require management staff to possess tacit and explicit knowledge, to share their expertise, information flow, planning skills, implementation of bottom-up initiatives, and the acquisition of sources of financing activities related to the development of entrepreneurship (Graetz, 2002). At the same time, strategic innovation combines alternately the processes of discovering existing things and the processes of creating new ones (Bilton, Cummings, 2010). Therefore, management staff representing all levels of management in the company, ought to concentrate their activities on achieving the assumed results by using knowledge and innovation, in order to maintain and increase the competitive position on the market.

The occurrence of strategic innovation forces the need to consider its costs and benefits in business models. Therefore, the business model should be the component of strategic management that provides management staff with reliable information (Itami, Nishino, 2010) on strategic innovation implemented by the company (Szajt 2020). Information generated in the business model should be both *ex ante*, *ex modernum* and *ex post*, since it ought to be the stimulus creating the development of innovativeness of enterprises.

Providing the framework for the implementation of strategic innovation solutions in the business model requires the possession of up-to-date information (Davenport, Prusak 2000), particularly in the field of the virtualization of economic reality (Grudzewski et al, 2010). Shaping the business model to create value requires taking into account the control of strategic innovation processes. This means that enterprises enter the cooperation relations and by implementing strategic innovation, they influence the shaping of innovative attitudes of stakeholders.

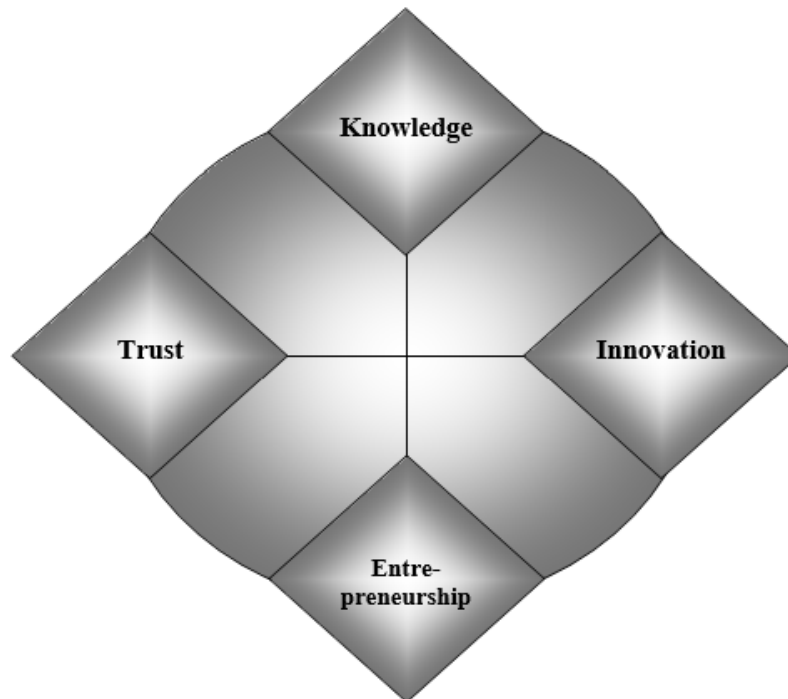
In the subject literature, it is assumed that strategic innovation can take one of the three forms [Renko et al, 2009]. The first one is a technological capability. It is a bunch of processes related to the management of knowledge, intellectual capital (Chluska, 2020) and investment in research and development. At the same time, strategic innovation is realized through research and development (R+D) activities, which include product development, patent and licensing policies (Hitt, et al, 2011). The second form of innovation strategy is market orientation in which the company's innovative activities focus on customers. Due to strategic innovation, the enterprise significantly changes customary organizational forms to approach the accomplishment of the assumed objectives (Hamel, Breen, 2008). The third form of strategic innovation is entrepreneurial orientation, according to which the enterprise focuses on radical innovation, which leads to aggressive actions against competitors, but this is associated with risk. This risk may be neutralized by applying the principle of "the appropriate order of strategic elements", in line with the concept of the Blue Ocean Strategy (Chan Kim, Mauborgne, 2007).

To sum up, it should be pinpointed that the application of the listed forms of strategic innovation is limited. Large enterprises focus mainly on entrepreneurial orientation, due to the need for growth. Small enterprises prefer market orientation due to resource constraints. On the other hand, the largest corporations ought to develop technological skills through investments in research and development. Further considerations require addressing the issues related to the integration of knowledge and strategic innovation, which are closely linked to the strategy understood as a set of competitive activities and adequate approaches to business, expressed in obtaining and maintaining a competitive advantage. Therefore, subsequently the attention will be paid to the "sustainable enterprise" model in the context of the ability to build sustainable business success.

## **3. Knowledge integration and strategic innovation in the "sustainable enterprise" model**

In the subject literature, knowledge is one of the four components of the "sustainable enterprise" model (Grudzewski et al, 2010). In this model, knowledge, innovation, entrepreneurship, and trust are features that most construct or reconstruct business. Knowledge in the "sustainable enterprise" model (Figure. 1.) is a smooth combination of experience, selected information and expert insight into the quality of the issue, which is to provide a framework for the evaluation and implementation of new information and experience (Davenport, Prusak 2000). Innovation in the "sustainable enterprise" model is to enable the implementation of knowledge about how to transform new ideas (Linder, Jarvenpaa, Davenport, 2003) into products or services,

and at the same time to keep this knowledge secret from competitors. This means that innovation becomes the basic mechanism for acquiring and maintaining competitiveness by enterprises.



**Figure 1:** The components of the “sustainable enterprise” model

Source: Grudzewski et al, 2010, Sustainability in Business, Poltext, Warsaw 2010, p. 36.

Combining innovation with cost proposals, usability and price create value innovation that arises in areas influencing both the structure and level of costs and the value proposal for the customer. Another component of the “sustainable enterprise” model is entrepreneurship. It concerns not only starting and developing new ventures (Dyduch, 2019), but most of all it includes business reorganization and the ability to renew it (Grudzewski et al, 2010). The process of entrepreneurship in the “sustainable enterprise” model ought to consider the ability to see opportunities and create organizations to follow them. An essential component of the „sustainable enterprise” model is trust that allows for achieving a sustainable competitive advantage (Kramer, 2009). At the same time, trust becomes the key organizational adhesive in modern business (Evans, 2005).

To sum up, it is worth pinpointing that, in addition to knowledge, innovation, entrepreneurship and trust, which are the key components of the “sustainable enterprise” model, an important role for the implementation of this model is played by management staff, who will be open to changes, visionary, and ultimately will be able to shape the company’s position on a competitive market. The “sustainable enterprise” approach is a young field of knowledge that is just emerging in the world, which is a turning point on the way to the company’s sustainable development. The further direction of the research will be around the search for the answer to the research question concerning the dimensions of knowledge in strategic innovation processes of enterprises and the implications that can be observed in this area in the case of companies of the logistics sector.

#### **4. Characteristics of the research sample and description of the research methodology**

The empirical research is to investigate the strength and direction of the linear relationship between strategic innovation and knowledge. The empirical research was carried out using the survey questionnaire. The statements included in the survey questionnaire were rated by the respondents on a scale from 1 to 5. The scope of the research in terms of entities included 100 enterprises (micro, small and medium) belonging to the logistics sector.

The enterprises covered by the survey operate in Poland in the area of the Silesian Voivodeship. The selection of the region was determined by the fact that the region is undergoing continuous economic changes from

the area predominated by the heavy industry to the one related to the dominance of services, knowledge management, creative industries, and innovation development. The choice of the region for the empirical research was also dictated by the conditions, such as, a relatively high number of small and medium enterprises established, a large number of consumers, a high urbanization index, convenient transport connections, which is conducive to the development of the logistics service sector and the highest population density in Poland, which brings about that the translation of innovation and knowledge into the market may be of particular importance in this area.

The vast majority of the surveyed entities was microenterprises (68%), with a European scope (53%). In the opinion of the senior management (71%), the profitability of the surveyed enterprises is determined by the concentration on a cost advantage (43%), differentiation (33%) or the market niche (24%) in one narrow market segment, which allows for high specialization. The selection of the research sample was random. The time range of the research included the years 2020 - 2021. The research was carried out using the Computer Assisted Telephone Interview (CATI) technique (Hair et al, 2014) at the turn of the years 2020 - 2021. The advantages of using the CATI method to accomplish the objective of the study are, among others, a short period of carrying out a large number of tests, high-quality results, regularity of stages during the research, an integrated course of data collection (Oláh, 2019). The applied research method has also constraints, related to difficulties in the case of conducting research consisting of a large number of open questions, or discussing issues too complex to respondents.

## 5. Results of the conducted empirical research

The research procedure was carried out in two stages. In the first stage of the research process, the frequency of responses given by the respondents was examined. In the second stage of the research process, the strength and direction of the linear relationship between strategic innovation and knowledge understood as the company's ability to learn were examined.

### 5.1 The first stage of the research process

On the basis of the research results, it can be concluded that the vast majority of the surveyed logistics companies use knowledge to learn from their own mistakes or the ones made by others (35% - I agree and 47% I completely agree). This proves that micro, small and medium enterprises of the logistics sector not only acquire knowledge on the basis of their own experience, but despite resource difficulties they observe competitors in the market in order to avoid mistakes in the future (Figure. 2).

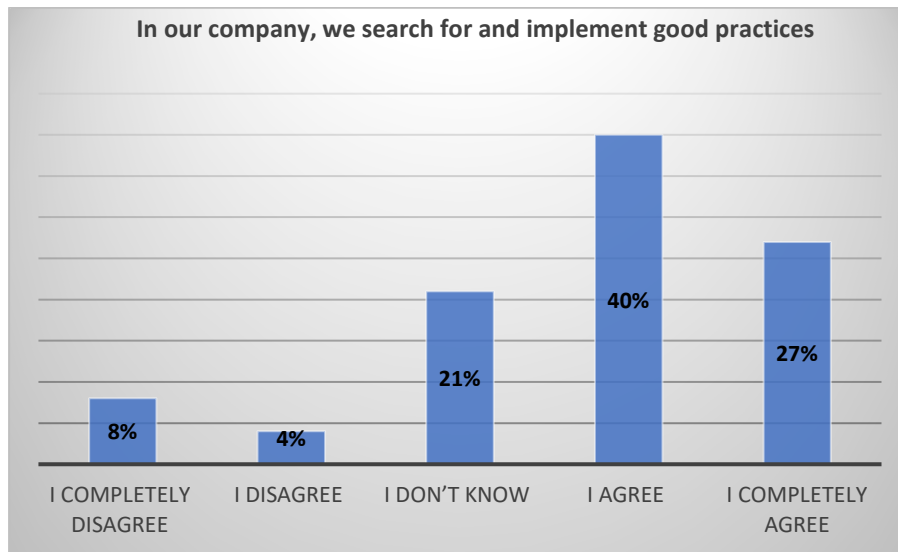


Figure.2: Processes of learning and avoiding mistakes

Source: Own study based on the conducted research

The conducted research has indicated that the surveyed logistics companies are interested in searching for good practices and their implementation in the activities conducted (40% - I agree and 27% - I completely agree). This

may prove the ability of the surveyed enterprises to adapt to changing tasks while enabling the creation of simple organizational structures (Figure. 3).



**Figure 3:** Implementation of good practices

Source: Own study based on the conducted research.

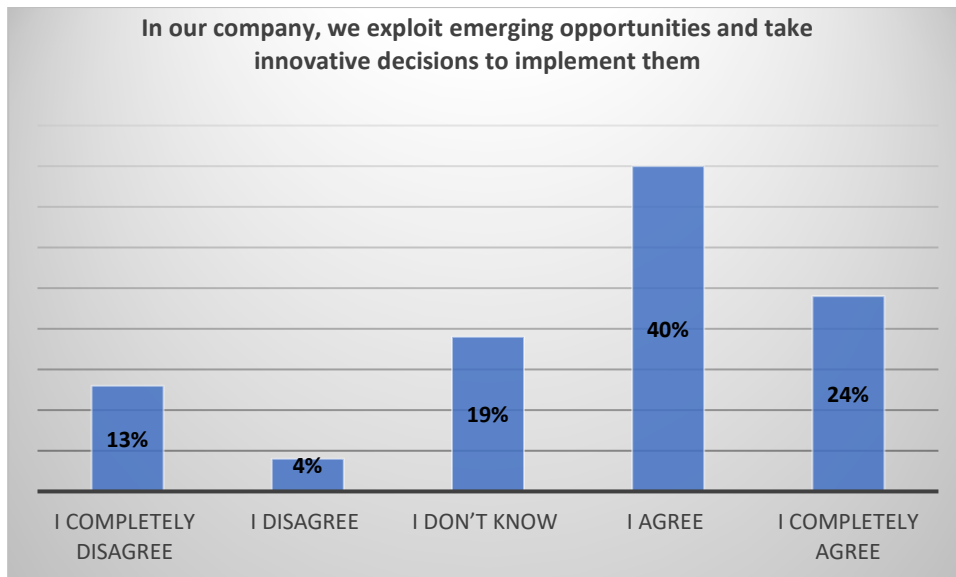
In the surveyed logistics companies, an important role is played by the processes of creation of new organizational practices (34% - I agree and 26% I completely agree). This means that the decision-making process in the surveyed enterprises is directed not only to the adaptation to market trends but also the identification of changes in the internal environment and the creation of organizational innovation (Figure. 4).



**Figure 4:** Creation of organizational innovation

Source: Own study based on the conducted research.

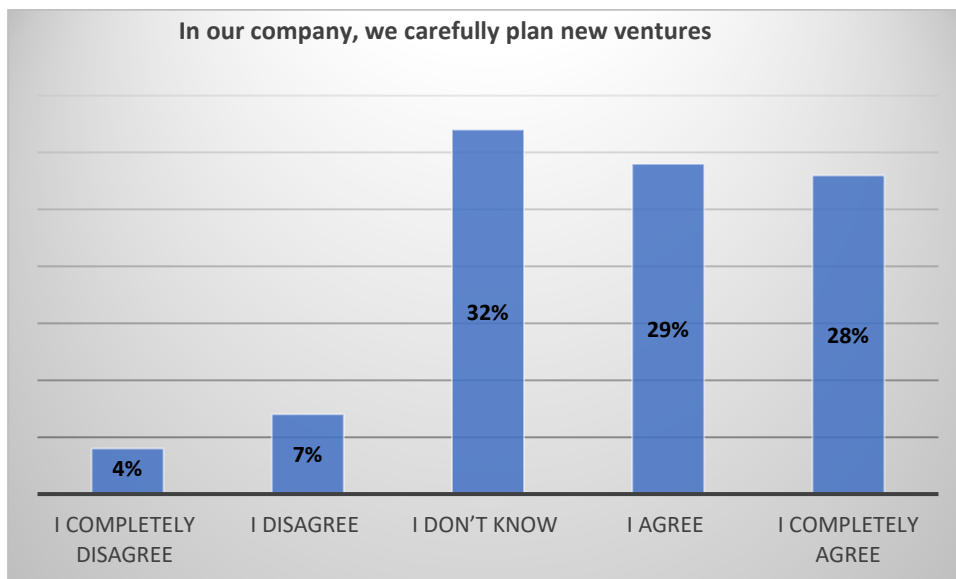
The research indicates that the decision-making process in which emerging opportunities are exploited and innovative decisions are made to implement them is relevant in the practice of activities of the surveyed enterprises (40% - I agree and 24% - I completely agree). The combination of knowledge and strategic innovation allows the surveyed enterprises to commercialize innovation and to create a unique offer, which allows micro, small and medium enterprises to survive in the market (Figure. 5).



**Figure 5:** Strategic innovation in decision-making processes

Source: Own study based on the conducted research.

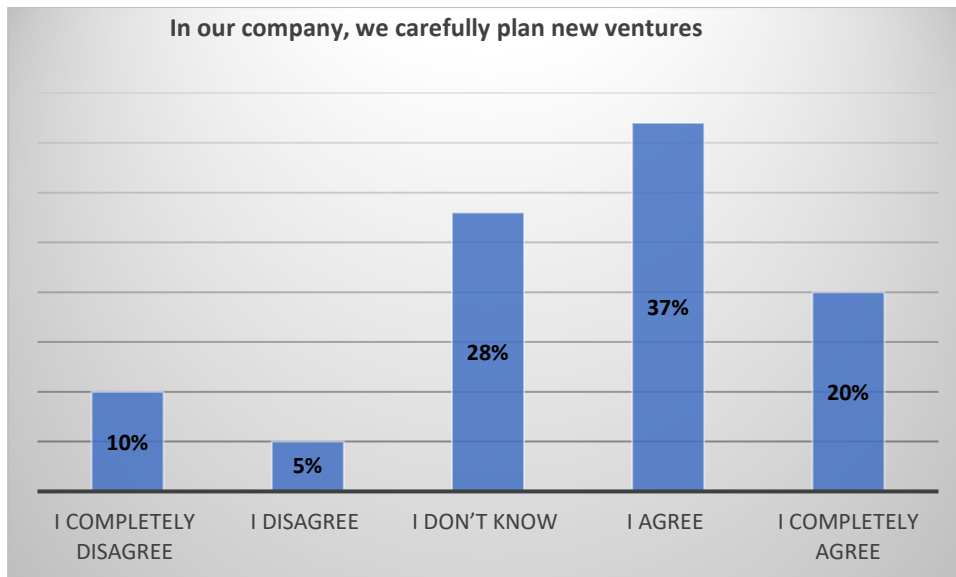
Among the surveyed respondents, one may observe the benefits resulting from planning new ventures (29% - I agree and 28% - I completely agree). The possibility of effective planning the conducted activities creates positive effects for both the surveyed enterprises and their customers, which is reflected in a wider and flexible offer (Figure. 6).



**Figure 6:** Strategic innovation in planning new ventures

Source: Own study based on the conducted research.

Most of the surveyed respondents agreed with the statement that the positively evaluated opportunities result in taking actions aimed at their implementation (37% - I agree and 20% I completely agree). This means that exploiting business opportunities by the surveyed logistics companies reflects the adopted business model which describes the content, structure, and principles of the functioning of exchanges for creating value (Figure. 7).



**Figure 7:** Strategic innovation in exploiting business opportunities

Source: Own study based on the conducted research.

It is worth pinpointing that the ability to identify opportunities by the surveyed enterprises should be combined, however, with the ability to identify threats related to competitors and integrating resources essential for exploiting emerging opportunities to create new value. At the same time, the strategic innovation process should consider the ability to notice opportunities and the ability to take advantage of them for further development. Moreover, giving responses by the indecisive respondents is noteworthy. This may be the evidence of the lack of knowledge among the surveyed respondents in the field of the given answers and the need for greater integration of knowledge and strategic innovation in micro, small and medium enterprises of the logistics sector.

## 5.2 The second stage of the research process

While searching for the response to the question: what dimensions of knowledge are significant for strategic innovation processes of enterprises and what implications in this area can be observed in the case of enterprises of the logistics sector, in the second stage of the research procedure, the strength and direction of the linear relationship between strategic innovation and knowledge were examined. For this purpose, the analysis of the Pearson correlation between the input variables was carried out. In the research procedure, three dimensions of knowledge understood as the company's ability to learn were isolated. These are: *Processes of learning and avoiding mistakes*, *Implementation of good practices* and *Creation of organizational innovation*. The strategic innovation of the surveyed enterprises was analyzed in terms of decision-making processes, planning new ventures, and exploiting business opportunities.

Figure 8 indicates that in the case of the surveyed logistics companies there is a strong positive relationship between strategic innovation realized in decision-making processes and implementation of good practices (0.66), and the creation of organizational innovation (0.75) in this field. The surveyed enterprises of the logistics sector are aware of the potential of the possessed knowledge and exploit opportunities to increase efficiency. A relatively low positive relationship was obtained between strategic innovation realized in decision-making processes and processes of learning and avoiding mistakes in the surveyed companies (0.32). This may be related to the fact that micro and small enterprises have a limited opportunity to learn from mistakes made by others.

When analyzing the relationship between strategic innovation in planning new ventures and implementation of good practices, a weak positive relationship can be observed (0.27). There is a similarly weak relationship between strategic innovation in planning new ventures and creation of organizational innovation (0.31). This may mean that the surveyed logistics companies cannot use the significance of knowledge in planning processes resulting from good practices or creating organizational innovation since they do not have sufficient (human and financial) resources, to use the significance of knowledge understood as the ability to learn. The moderate positive relationship is observed between strategic innovation in planning new ventures and creation of

organizational innovation (0.54). Organizational innovation may contribute to reduction in operating costs of logistics companies and imply new services or products with the same amount of expenditure incurred, which is conducive to strategic innovation processes in planning new ventures. The results are presented in Figure 8.

Strategic innovation			
<b>Strategic innovation in decision-making processes:</b> In our company, we exploit emerging opportunities and take innovative decisions to implement them	<b>Strategic innovation in planning new ventures:</b> In our company we carefully plan new ventures	<b>Strategic innovation in exploiting business opportunities:</b> In our company, the positively evaluated opportunities result in taking actions aimed at their implementation	
0.32	0.27	0.31	<b>Processes of learning and avoiding mistakes:</b> In our company, we learn from our own mistakes and the ones made by others
0.66	0.31	0.49	<b>Implementation of good practices:</b> In our company, we search for and implement good practices
0.75	0.54	0.67	<b>Creation of organizational innovation:</b> In our company, new organizational practices are created
			Knowledge as the company's ability to learn

Figure 8: Matrix of the Pearson's correlation of the input variables

Source: Own study based on the conducted research.

When examining the relationship between strategic innovation in exploiting business opportunities and creation of organizational innovation, a strong positive correlation is observed (0.67). The enterprises that implement new organizational practices configure their value chain so that they could make different choices within the framework of the possessed resources, which provides the enterprise with the opportunity to build its competitiveness. There is a moderate positive relationship between strategic innovation in exploiting business opportunities and creation of organizational innovation (0.49). This may result from the need to reconcile contradictions between building a competitive position and building internal relations in enterprises. The surveyed logistics companies do not use the potential of knowledge resulting from the relationship between strategic innovation in exploiting business opportunities and processes of learning and avoiding mistakes (0.31). This may be due to the fact that the cost of knowledge transfer from the inside of the company becomes an important factor of a competitive advantage in the case of enterprises operating on a micro scale.

## 6. Discussion

This study was based on the assumption of the existence of complex relationships between the two variables. The first variable is knowledge understood as the company's ability to learn. The other variable is strategic innovation defined as a long-term process requiring management staff to share knowledge, have knowledge, the ability to plan and also to take innovative activities that develop entrepreneurship. In the study, the response to the question was searched for, concerning what dimensions of knowledge are significant for the processes of strategic innovation of enterprises and what implications in this area can be observed in the case of enterprises of the logistics sector. The results of the conducted research suggest that knowledge has a positive impact on the strategic innovation processes of the surveyed companies. A clear implication from the conducted research is that along with an increase in knowledge in creation of organizational innovation, there is an increase in strategic innovation in decision-making processes. An increase in knowledge due to implementation of good practices in the company also results in an increase in strategic innovation in decision-making processes. This is the confirmation of the adopted assumption on the occurrence of the relationship between the two analyzed variables. Furthermore, in the case of strategic innovation in decision-making processes, the analyzed relationships may prove an increase in awareness of the management staff of the surveyed logistics companies in terms of the potential related to the possession of knowledge.

The significance of knowledge related to creation of organizational innovation in the processes of strategic innovation of enterprises is also noticeable in the area of exploiting business opportunities. Along with an increase in knowledge concerning innovative organizational practices, there is an increase in the level of positively evaluated opportunities which result in taking actions aimed at their implementation. This means that micro, small and medium enterprises of the logistics sector search for opportunities to build their competitiveness and eagerly create organizational innovation so as to benefit from the acquired knowledge.

However, it is worth pinpointing that despite the management staff of the surveyed enterprises are aware of the significance of the three identified dimensions of knowledge in strategic innovation processes, the results of the examined relationships are weak in the area of planning new ventures and implementation of good practices and creation of organizational innovation. The similarly weak relationships are observed between processes of learning and strategic innovation in exploiting business opportunities. The fact of the occurrence of weak relationships in the indicated areas may prove that the surveyed micro, small and medium enterprises of the logistics sector have problems with using knowledge to achieve strategic innovation. Maintaining a competitive advantage by micro, small and medium logistics companies does not concentrate only on discovering ideas. In the conditions of the turbulence of the environment, micro, small and medium enterprises of the logistics sector shift the center of gravity from strategic to operational objectives. Therefore, from the point of view of the significance of knowledge in the processes of strategic innovation of enterprises, it becomes very important to pay attention to a creative search for new areas of generating value, considering interactive ties of the company with its constantly changing economic environment, which will allow the creation of the sustainable enterprise by companies of the logistics sector.

## **7. Conclusions and summary**

In the conditions of uneasy and complex business environment, understanding the significance of knowledge and relationships between knowledge and strategic innovation is one of the basic factors determining the company's success. The major theoretical contribution of this study is strong empirical evidence confirming the significance of knowledge and the occurrence of the relationship between knowledge understood as the company's ability to learn and strategic innovation. By describing and analyzing the strength and direction of the linear relationship between difficult and multidimensional variables such as knowledge and strategic innovation, the study contributes to the existing literature by combining the two relevant factors of the operation of modern enterprises. When generalizing the above considerations, it can be assumed that enterprises actively implementing knowledge effectively generate new ideas in terms of strategic innovation and the listed implications in this field allow for reducing the gap between the organization and changes in the environment.

It is worth emphasizing that the relationships between the identified dimensions, knowledge, and strategic innovation, intertwine and complement each other, but they are not the same. Moreover, micro, small and medium enterprises of the logistics sector must urgently solve current management problems, thus, the understanding of the relationship between knowledge and strategic innovation will allow them to enter new areas of activities, enabling the long-term competition in the market, according to the concept of the sustainable enterprise.

However, the research into micro, small and medium enterprises has its constraints. Firstly, the subject literature in this field is dispersed, which was a challenge during the construction of the theoretical framework of this study. Secondly, obtaining a broader perspective of the analyzed problem was problematic due to the limited research sample. For these reasons, one of important research subjects in the future can be a discourse related to the understanding of the multidimensional nature of the issue of knowledge management in strategic innovation processes of contemporary enterprises.

To sum up, the major objective of this study was to examine the strength and direction of the linear relationship between knowledge understood as the company's ability to learn and strategic innovation. The presented considerations allow for the following observations:

- in a situation of the variability of the environment, knowledge, which demonstrates the cohesion between strategic innovation processes, is of great importance,
- appropriate configuration of knowledge and strategic innovation is conducive for exploiting development opportunities and realization of innovation.

In the light of the conducted considerations, it can be assumed that the dimensions of knowledge are significant in the processes of strategic innovation of enterprises and the revealed implications in this field are important for enterprises of the logistics sector. In conclusion, the considerations presented in this study allowed the accomplishment of the assumed research objective. The discussed issue of the significance of knowledge in terms of strategic innovation is important and up-to-date due to its impact on strategic decision-making in the surveyed enterprises.

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