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## State of the innovation investment and innovation management in SMES of Kazakhstan

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**Abstract.** Innovations have recently become one of the indicators of the commercial success of the companies. This phenomenon is taking place due to a rapid development of new technologies and their effect on competition between the companies. The main purpose of the present paper is to investigate the current state of the innovation activity and innovation management among small and medium enterprises of the Republic of Kazakhstan. To achieve the aim of the paper, a qualitative analysis of interviewing 100 SMEs representatives has been conducted. The principal findings indicate of the following commonalities. The level of revenue and the innovation activity were not directly connected for the respondent businesses. The representatives had limited understanding of the innovation types and areas of application. After the briefly educating the respondents, the authors have found significant changes in attitudes towards investing into innovations. The value of the present paper is connected with the practical significance of increasing the innovational activity of the SMEs of Kazakhstan. Moreover, the study can be replicated for other developing Central Asian countries to find out whether the phenomenon is connected with regional features. As for the practical implications, the paper can be used to develop governmental and private educational programs as a part of supporting the SME activity or a part of vocational training.

**Key words:** Innovation in SMEs, innovation management, investment in innovation, business strategy.

## **Introduction**

It is clear that small and medium size businesses (SMEs) play a significant function in the economy of the country as they serve a role of job creators and massive contributor to the country's budget. Taking into account such benefits, countries need to establish conducive environment for the establishment, development and performance of the SMEs. At the same time, innovations define the performance of the company. The race between the companies for the biggest market share has made the necessity to employ innovation clear. The industries are shaped by the extent, volume, and the speed of implementation of innovations. For many companies' innovations became the definition of success as the firm performance is heavily influenced by it. As SMEs gain competitive advantage by employing innovations, the present article aims to study the innovation management issues among SMEs of Kazakhstan. The present study has identified that the information collected by the state statistics departments is mainly numeric and does not allow making any conclusions regarding the state and quality of SMEs' innovations. Thus, the present article recognizes the scarcity of the available information about the innovational activity of the small and medium enterprises of Kazakhstan. Based on the knowledge gap, the aim of the article is to study the current state of the innovations and innovation management in the SMEs. In order to formulate a new knowledge and describe the dynamics in the innovation introduction and management in Kazakhstan, a qualitative research is conducted among 100 representatives of top or middle management of SMEs. It is important to point out that in the Republic of Kazakhstan small and medium enterprises are defined by the law and the main indicator is the number of employees and the turnover per annum. As soon as the company exceeds the threshold, it needs to report to the committee of the statistics and change its category to a different one. At the moment threshold for a small 250 employees and turnover of less than 3,000,000 monthly calculated indicator. The following chapter investigates the literature relevant to the research questions in order to build a theoretical framework and identify the existing knowledge gap.

## **Literature Review**

The innovation creation, usage and management in the real business sector are among the key tasks of the business owners. That is why; it became a focus of study of many scientists and scholars. If to focus on the existing literature on the innovation management in SMEs, it becomes clear that innovation management in the named sector depends on number of internal and external factors such as open innovations, knowledge management, and leadership promoting knowledge and so on. For instance, Chaithanapat et al. have conducted a study consisting of the responses of 283 SMEs in order to reveal to what extent innovation quality is dependent on the knowledge of the customer, knowledge orientation of the managers and the knowledge management policies inside the organization [6]. The authors discuss the necessity of the SMEs to refer to external innovations due to a general shortage of funding [4] and human resources needed to generate its own innovation. In terms of efficient usage of the financial resources, it is obvious that SMEs benefit from adopting innovations created externally rather than allocating

resources to internal R&D [5]. That is why, knowledge management becomes the clear facilitator of the innovations in SMEs.

For instance, Chaithanapat et al. (2022), Zia (2020) and Wen et al. (2020) emphasize the role of knowledge as being one of the essential factors of innovation success. The knowledge management is an intrinsic and undividable part of the innovation management. In this regards, knowledge orientation and development of the knowledge of the customer are important parts of it

Leadership style is claimed to define the quality of the innovations implemented in the company, because only with clear objective and understanding of the internal processes, the company can innovate to become more successful. What is even more important, the leadership should be able to introduce an action plan to implement the innovations in the company. In this regards, knowledge-oriented leadership is seen as one of the indicators of successful innovations in the company (Zia, 2020). Chaithanapat et al. (2022) define this style of leadership as integration of the transactional and transformational ones. Here the learning environment is established, encouraged and actively lead by the manager [7].

Another side of the knowledge that SMEs need to continuously develop in order to be profitable is customer knowledge. Before innovating on the product or the service, it is important to understand who the prospective customer is. The understanding of the customer incorporates elements such as customer experience, sentiments, values and perceptions. Companies engage with their customers continuously in order to learn about them. This allows to innovate having in mind their needs and desires. In fact, Taherparvar, Esmaeilpour & Dostar (2014) and Wen et al. (2020) explain that part of the innovations implemented in SMEs takes place because companies have started analyzing their customer more. The desire to predict customer sentiments and problems and employ the knowledge to innovate has gained popularity among the companies. This was called co connecting and developing (C&D), which implies that development is carried out by connecting ideas of the customers. This idea is further explained by Taherparvar, Esmaeilpour & Dostar, who state that developing knowledge of customer facilitates creation of the company's knowledge, and hence, "both external and internal competencies" develop and it empower the companies to create innovations and be successful in various market situations [13].

Being knowledge-oriented leads the company to engage in open innovations in order to generate more profit [5]. SMEs are different from large businesses in using open innovations because they usually are not as formal and complicated as large businesses, thus, the innovative process is carried out with greater flexibility and the decisions are made faster. Zia explains that managing knowledge and innovation in small and medium companies tends to take place "in an informal way without the support of purposely designed information and communication system". Similarly, Bigliardi and Bigliardi et al discuss the flexibility that the size of the company grants to SMEs. Introduction of innovations can help the SMEs become more competitive and thus create new niches or to win over existing ones. The unique proposal that innovations ensure will influence the customer loyalty and, thus, price sensitivity will be reduced. This means that the company will be able to increase its profitability.

Another factor to be considered is the narrowing the SMEs from global scope to SMEs operating in emerging markets. In this regards, Charmjeree, Badir and Safdar (2022) have conducted

research of usage of external innovations by small and medium IT companies in Thailand to find out that the external technology acquisition and exploitation positively correlate with company's not only financial performance, but also innovations efficiency. The test has been conducted on the specific market and limited number of companies; thus, the results cannot be universally applied to other industries. However, the conclusion made by authors defend the idea of beneficial usage of external innovations by SMEs of emerging markets.

Moreover, the extensive focus has been given to a question of how to measure and identify the volume and extend of the innovation. For instance, Richtner et al. (2017) argue that innovation measurements are in majority quantity based and, thus, often lack substantial understanding. The authors explain that performance measured by quantitative indicators cannot fully explain what the outcomes of the implementation of the innovation are at all. Moreover, based on the analysis of survey of 45 managers, the authors conclude that too much value is given to numerical information, which does not carry practical meaning. In fact, the statistical information released by Bureau of National statistics is mainly only numerical. It is divided and measured across industries and regions. However, there is no distinct information regarding the type of innovation. Thus, official statistics does not give sufficient information of the state of innovations in the SMEs. At the same time, it does not allow to see in which internal and external directions innovations are being conducted. By this, it is clear that the statistic information collection neglects the importance of in-depth description of the innovation creation, usage and management. Richtner et al. (2017) differentiate three issues that managers face when evaluating the innovations within the company. They are: 1) over or underestimation of the innovation measurement; 2) measuring the innovation partially; 3) ignoring the effect the innovation measurement has in internal politics of the company. In the context of the described issues, the managers of the studied companies have faced problems such as large scale of information, which makes its administration difficult and, thus, the information cannot be used for timely decision-making. Instead, such companies ended up taking delayed decisions with low relevancy.

It is clear that financial and operational indices that focus on result are example of lagging measurements. These indices include the outcomes of sales, costs, profit, customer recurrence and similar. These can be beneficial in measuring the long-term development pattern of the company. However, in the short term these measurements have a lagging effect, which means that they are ready only when the actions have been finished. Thus, they cannot be used as a performance orienteer in shorter periods. Richtner et al. (2017, p.9) claims that "lagged indicators don't help prioritizing", and thus, the innovational activity and performance of the SMEs cannot rely only on those indicators. The critique in measuring innovations and its effect is in the fact that companies do not single out processes and effects of the input, productivity and the outcome. Taking into account the fact that innovation implementation should be tracked throughout the whole cycle; it is a necessity to view not only the results shown in financial and operational measurements. In fact, the speed of the innovation process is a different indicator that can be traced. They are the length of the process, average time needed to market the product or service, performance against schedule. These indicators show how well the throughput is managed. At the same time, the responsiveness can be equally good indicator to analyze, because it shows how well the innovations are completed from the start of the request in them.

Another practically important work has been conducted by Keeley (2013), who identified ten types of innovation, which were grouped into three categories, which are configuration, offering and experience. Configuration included innovations in processes, structure of the organization, networking model and the profit model. The offering group included the innovations in the product system and performance. The third category, which is called experience, included innovations in service provided along with the main offering, distribution channel, brand management and the customer engagement [4]. Thus, Keeley offers a broad framework of viewing and applying innovations in the businesses.

From the literature review provided above it becomes clear that extensive research has been done on the topic of innovation management and knowledge management facilitation of innovations (Hult, 2004, Taherparvar, Esmaeilpour & Dostar, 2014, Wen et al., 2020, Zia, 2020, Jiang et al., 2022, Richtner et al., 2017, Wen, 2020). Fewer scholarly articles focus on innovations in SMEs (Ali, 2020, Bigliardi et al., 2021, Brunswicker & Vanhaverbeke, 2015, Chaithanapat et al., 2022). However, studies of the innovations in SMEs of emerging markets are rather limited (Charmjuree, Badir & Safdar, 2022). This is resulted from a lower availability of the secondary databases. Thus, the conclusions generated for the global SMEs can be applied to local and emerging SMEs with limitations. At the same time, this calls for action the researchers who can extend the knowledge on the topic of innovations in SMEs by including respondents from the emerging markets.

## **Research methods**

The present paper will employ a qualitative analysis to reveal the current state, issues, and other features of innovation implementation in SME of Kazakhstan. The analysis for the present paper involves surveying 100 SME representatives located and operating in urban areas. The survey approach has been selected for a number of reasons. They are ability to investigate the features of the surveyed population with closer analysis of the various variables. Moreover, as Kraemer claims, surveys results can be extrapolated to represent the whole population. The surveys were created and distributed in the online Google Form website. The questions were mainly multiple choice and required a respondent choose from the given options. This allowed to avoid discrepancies in the formulations of the respondents and allowed to keep the analysis as simple and concise as possible [11].

For the second part of the analysis, the 10 surveyed SME representatives are chosen to take part in interviews, where the present article follows the methodology used by Chaithanapat et al. (2022) and Taherparvar, to reveal the extent to which the knowledge-oriented leadership and customer knowledge management facilitated the innovation efficiency including the innovation speed and quality. Moreover, the study of the external innovation usage has been adopted from the methodology used by Charmjuree, Badir & Safdar [13]. In this regards, the following research questions have been identified considering the existing gap in the knowledge:

- What is the state of the innovation investment in SMEs of Kazakhstan?
- To what extent SME representatives understand what innovation is?
- Does attitude of the company's management towards innovation management define the speed and quality of innovations in the SMEs?

To results of the study conducted using the present research design will be discussed in the following part of the article.

### Research results

The research results section will be organized as follows. Initially, the demographics of the survey respondents will be discussed to understand the features of the sample population. In addition to the description of the respondent a brief analysis of the business itself will be presented. Moreover, the results will be grouped and organized in the order of relevancy to the research questions. Additional discussion and findings will be presented throughout the research results section.

If to describe the respondents in order to understand their age and gender distribution, the overall picture looked as follows:

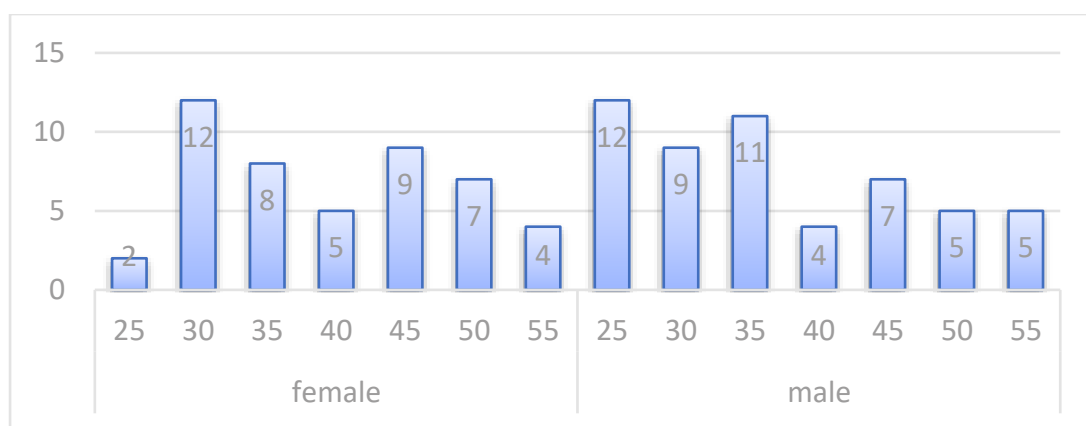


Figure 1 – Ages and gender distribution of the respondents

Note: Description-compiled by the author

47 of the respondents were females, and 53 were males. The age distribution is presented by the age and gender in the Figure 1. 40% of the respondents were 30 to 35. The other age groups are distributed in the following proportions:

Table 1 – The age distribution of the respondents

Age	Percentage
25	14%
30	21%
35	19%
40	9%
45	16%

50	12%
55	9%

Note: Description-compiled by the author

The biggest age groups were 30, 35 and 45, while there were no respondent younger than 21 or older than 59. It is important to note that age groups were generalized to include 5 years meaning that age group 25 included ages starting from 21 to 25.

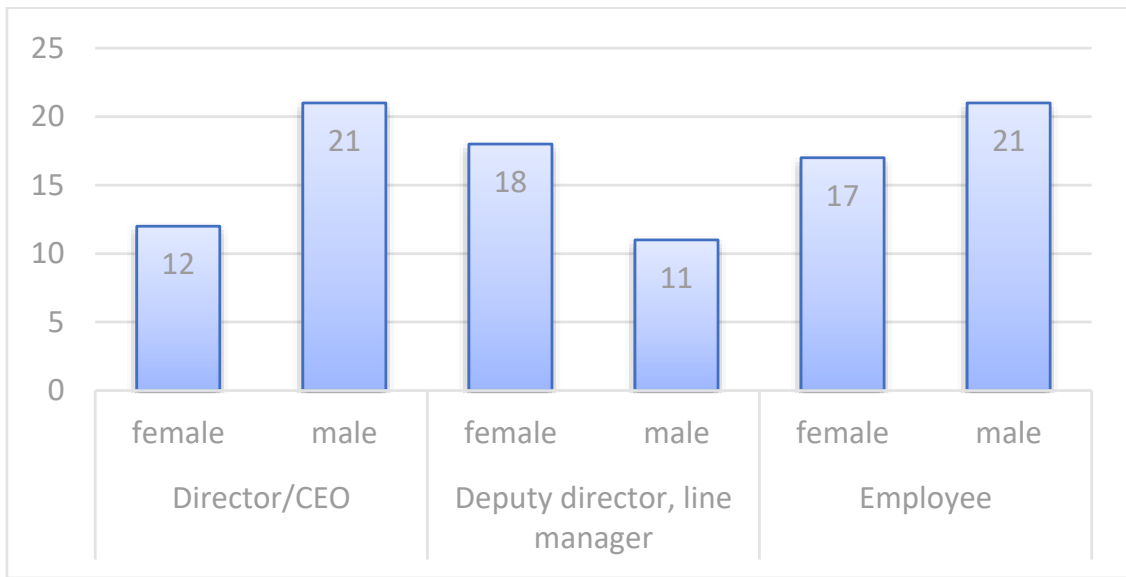


Figure 2 – Roles and genders of the respondents

Note: Based on the material of Agency for strategic planning and reforms of the Republic of Kazakhstan

The figure above shows the roles of the respondents within the company they represent with the division by gender. The 33 of the respondents were the directors of the companies, 29 were line managers or deputy directors and 38 were an employee, whose work responsibilities were related to innovations and innovation investment in the company.

As for the description of the companies, the respondents were chosen from small and medium enterprises of Kazakhstan and included the companies working in nine industries. The number of employees are displayed in the Table 2 below.

Table 2 – The classification of the SMEs based on industry and number of employees

Industry	Number of employees				Total
	5 or less	50 or less	100 or less	more than 100	
Educational services	6	8	5	6	25
Entertainment	2	4	1	4	11

Food services	4	5	6	5	20
Marketing services	3	2	0	4	9
Non-food retail	1	2	2	3	8
Production of own goods	2	2	0	1	5
Software development and IT services	7	3	2	2	14
Transport and logistic services	3	0	3	2	8
Total	28	26	19	27	100

Note: Description-compiled by the author

From the table, one can clearly see that educational services and food-related services were the majority of the respondent companies. Moreover, the companies that participated in the study have different number of employees. The distribution of the companies based on the number of employees is almost even, with a slight shortfall in the category of 100 or less.

The following Figure reveals the turnover volume in 2021 in the studied companies.

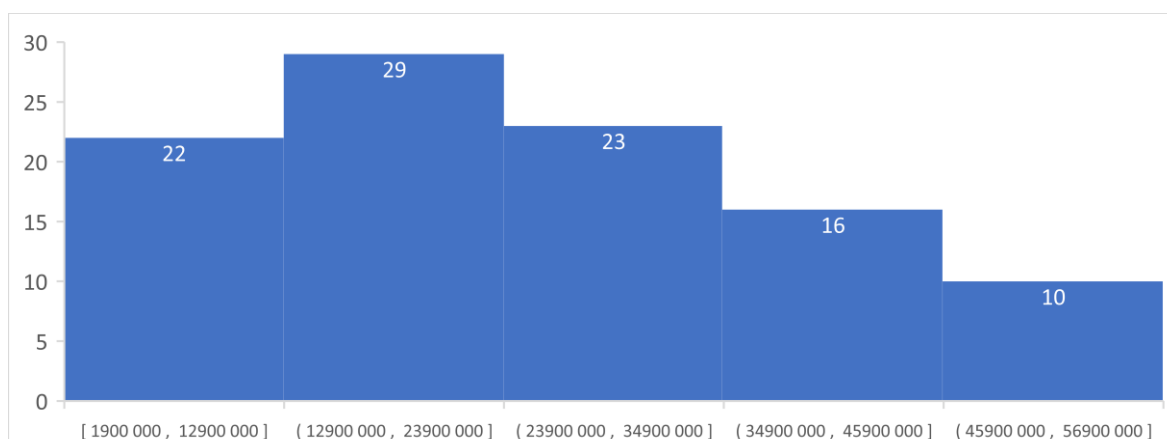


Figure 3 – The turnover rates of the studied companies, KZT

Note: Based on the material of Agency for strategic planning and reforms of the Republic of Kazakhstan

The Figure 3 illustrates the revenue that the companies generated in 2021. The half of the companies have earned less than 24 million Kazakhstani tenge (KZT). The others were distributed with rising revenue but decreasing in quantity, which is specific feature of SMEs that generally face restriction in financing their operational activity (Albaz et al., 2022).



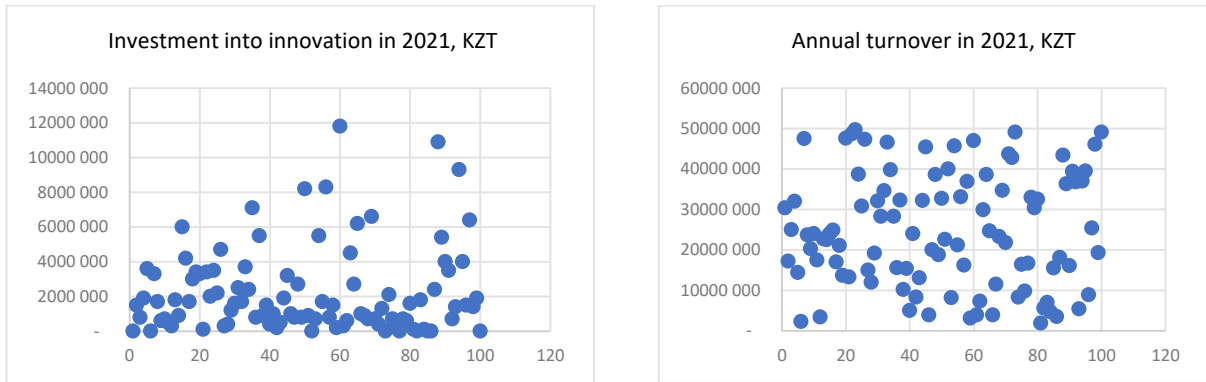


Figure 4 – Investment into innovation and annual turnover in 2021, KZT

Note: Description-compiled by the author

The figures displayed above exemplify the difference between the earnings and the innovation investment in the companies included in the present study. From the graphs above it is evident that the majority of the companies did not have any innovation-related investment in 2021 or had less than 2 million KZT, whereas the earnings were distributed almost evenly. In fact, calculation of the innovation investment ratio over the turnover results in the following histogram.

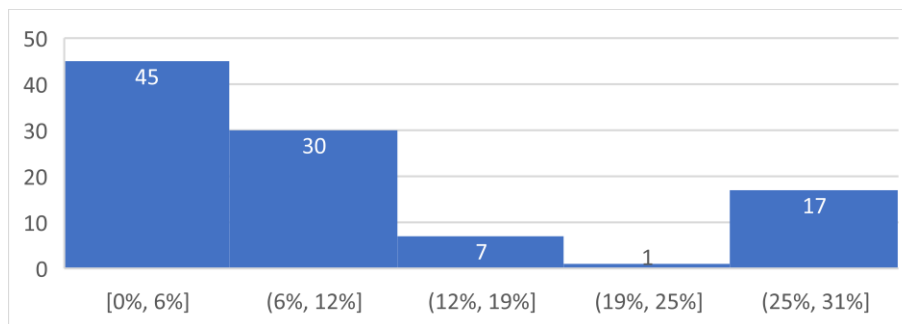


Figure 5 – Ratio of the innovation investment over turnover, %.

Note: Based on the material of Agency for strategic planning and reforms of the Republic of Kazakhstan

The majority of the companies (45) have less than 6% of their turnover invested in the innovations. Out of these 45%, nine companies had no investment at all. Thirty companies have invested from 6% to 12%, whereas other twenty-five companies have invested from 12 to 31% of the turnover in the innovation.

In addition to the aforementioned, the companies were questioned regarding their future plans to invest in the innovations in the following year, in five-years' time and in ten-years' time. The authors have conducted a brief experiment by asking these questions twice. Once it was asked without any explanation. After having answered, the questionnaire provided explanatory notes on the innovation, presented brief information on Keeley's 10 innovation types (Keeley,

2013). After that, the same questions were asked from the respondents in order to reveal whether the presented educational information would change the responses.

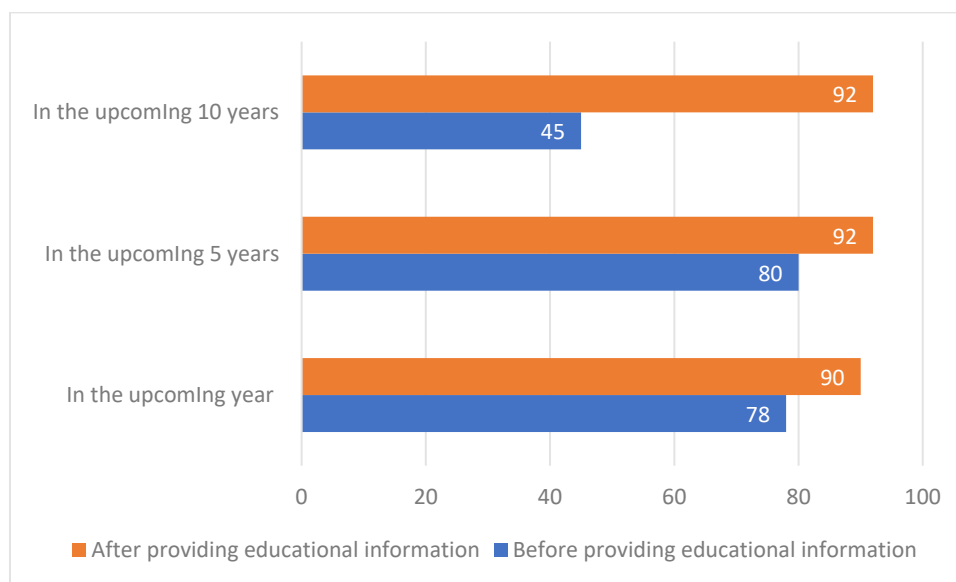


Figure 6 – Anticipations of the companies regarding investing in the innovation, %.

Note: Description-compiled by the author

Thus, from figure 6 it is evident that small amount of the information provided to the respondents have significantly changed their responses regarding plans to allocate funding to innovations. This can be explained by the fact that the respondents have been explained the wider scope of innovation application, and, thus, have realized its importance.

In order to further elaborate on the phenomenon, the 10 respondents were invited to provide their opinion regarding the innovations in their companies, innovation implementation and how the attitude of the management could affect the success of innovation usage. The responses were transcribed and labeled to reveal the following.

The respondents reflected to their answers before and after being provided information about the innovation. It was found out that the respondents associated the innovation with “technology or machinery acquisition” (10 respondents), “IT” and “software development and implementation” (9 respondents) and “importing innovative services and products” (6 respondents). In other words, the business owners’ and representatives’ understanding of the innovation is limited and misleading. Half of the respondents did not consider minor improvements that the company undertook as innovations. These improvements included changes in the sphere of customer relations, development of new services and improvement of the existing service or a product. Thus, in fact, the respondents admitted that the filings submitted to the Agency of Statistics and the responses given in the present study covered only investments into IT, software development, machinery and purchasing technology from foreign companies.

Another concept discussed with the respondents in interviews was the extent to which the management’s understanding of the innovations improved the speed and quality of innovations

in the SMEs. In this regard, the respondents were explained that the term “management” referred to the top management including the chief executive officer and deputies. The responses varied between the following:

One group of the respondents (4 people) supported the view that company’s management should develop the strategic goals, while the relevant personnel need to develop tactical decisions regarding which innovations to implement to reach the strategic goals. The respondents explained that the innovation implementation does not depend on the attitudes of the management as the attitudes can be changed if the investment opportunities are concisely communicated to them. However, the other respondents had a completely different view that the attitude of the top management defines the success of innovation implementation and usage, especially, taking into account the scarcity of free funds to finance the investment options. The respondents (4 people) explained that the business owners and business managers should be in continuous search of suitable and relevant innovations to implement. They explained their view by the necessity to have a comparative advantage over the competitors (4 people) and need to create new cash inflow sources (2 people). Moreover, the respondents (4 people) have mentioned being unable to analyze all the possible innovations that can be implemented due to scarcity of time and other resources. The business representatives admitted that daily operational activity did not leave much time and resources for innovative activity.

In conclusion, the research results have presented findings that fill some of the knowledge gap present in the field of innovation and innovation management in Kazakhstani SMEs. The following section provides a discussion of the findings and their relation to the existing knowledge and gaps in it.

### **Discussion of the results**

The present part of the article presents a discussion of the findings considering the relevancy of the findings, recommendations, practical applications and the limitations and biases of the research.

Initially, it is evident that the company’s innovation investment volumes did not depend on its level of revenue. In fact, if the studied companies had varying degrees of revenues with big distribution, the figures for the investments were closer to minimal values, where more than half of the companies invested less than 10% of the revenue. Moreover, another conclusion that can be made from the present research is that the business representatives do not have a full understanding of the innovation as a concept and a tool to develop their businesses. Many businesses do not employ strategic vision and thus do not make long-term plans to invest in innovation and improve their offerings. This is explained by the limitedness of the exposure to the sources of innovation of the business owners. The innovative ideas are not directly communicated to all of the SME owners and managers, thus, in many cases they are missing out. Moreover, it is possible that business representatives may have personal biases or preconceived notions about innovation that prevent them from considering it as a viable option for their business. Another reason mentioned by the respondents and supported by the existing

literature is the limitation of resources. SMEs traditionally encounter problems with financing, human resources, and time.

However, one reason not mentioned by the respondents was connected with the risk aversion, SMEs may have limited financial resources, and, thus, their budget may not cover costs if investments do not pay off. Furthermore, current operations are the main source of revenue of SMEs and, thus, activities that may disrupt these main operations.

Moreover, this misinterpretation of the innovation as a concept has a greater impact as it finds reflection in the statistics gathered by the government. Statistics are gathered from the businesses, who fill the statistical forms based on their own understanding. Thus, the information collected and published by the Agency of Statistics does not contain the full information and does not provide the comprehensive understanding of the innovation usage and implementation among SMEs of Kazakhstan. Thus, the present article can be a trigger for the Agency of Statistics to reconsider the approaches it employs in gathering the data. Moreover, the data gatherings should be conducted after educating the relevant employees of the companies to ensure higher accuracy of the data.

During the research, the following limitations were encountered. One limitation of the present article relates to the low availability of the data on the innovations in SMEs. Moreover, the research design allows for participant bias taking into account the digital distribution and gathering of the survey. This may result in respondents possibly being not representative of the population due to self-selection bias as mainly technically capable respondents took part in the survey.

## **Conclusion**

To conclude, the innovational activity has a high significance for the business success of the enterprises. Taking the high importance of applying the innovations in the course of business conduct, the present paper has examined the issues related to the innovational activity of SMEs operating in Kazakhstan. Drawing on the existing scholarly articles and available statistical data for the SMEs of Kazakhstan, the authors have found a knowledge gap in the area of innovation activity and involvement of the businesses. Having interviewed 100 representatives of small and medium-sized businesses, the authors found that the businesses do not invest regularly in innovations for their business growth. This could be connected with the fact that many respondents have reported absence or formality of strategic planning. Moreover, having conducted an experiment of briefly educating the top and middle managers of the types of innovations, the authors have found a significant difference in attitudes towards investing in innovations. The practical and theoretic implications of the present article are that the SME development in Kazakhstan could be facilitated by developing additional educational training of business owners and managers. Moreover, the present study could be replicated in other countries to reveal their SMEs' innovation management and investment state. The materials could be used to prepare educational and vocational programs for working small and medium business owners and managers. Furthermore, the present theme can be further researched by including more respondents and investigating other factors affecting the innovation related decision-making in SMEs.

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### **Қазақстанның шағын және орта бизнесіндегі инновациялық инвестициялар мен инновациялық менеджменттің жағдайы**

**Андатпа.** Жақында инновациялар компаниялардың коммерциялық табысының көрсеткіштерінің біріне айналды. Бұл құбылыс жаңа технологиялардың қарқынды дамуына және олардың компаниялар арасындағы бәсекелестікке әсер етуіне байланысты орын алуда. Осы жұмыстың негізгі мақсаты-қазақстан Республикасының шағын және орта кәсіпорындарының инновациялық қызметі мен инновациялық менеджментінің қазіргі жағдайын зерттеу. Жұмыстың мақсатына жету үшін Шағын Және Орта Бизнесінің 100 өкілімен сұхбаттасуға сапалы талдау жүргізілді. Негізгі нәтижелер келесі ұқсастықтарды көрсетеді. Табыс деңгейі мен инновациялық белсенділік респонденттердің бизнесі үшін тікелей байланысты болмады. Өкілдер инновациялардың түрлері мен қолдану салалары туралы шектеулі түсінікке ие болды. Респонденттерге қысқаша білім бергеннен кейін авторлар инновацияларға инвестиция салуға деген көзқараста айтарлықтай өзгерістер тапты. Бұл жұмыстың құндылығы Қазақстанның Шоб субъектілерінің инновациялық белсенділігін арттырудың практикалық маңыздылығымен байланысты. Сонымен қатар, бұл құбылыстың аймақтық ерекшеліктермен байланысы бар-жоғын анықтау үшін Зерттеуді Орталық Азияның басқа дамушы елдері үшін қайталауға болады. Практикалық салдарға келетін болсақ, бұл жұмыс ШОБ қызметін қолдау немесе кәсіптік оқытудың бір бөлігі ретінде мемлекеттік және жеке білім беру бағдарламаларын әзірлеу үшін пайдаланылуы мүмкін.

**Негізгі сөздер:** ШОБ Саласындағы Инновациялар, инновациялық менеджмент, инновациялық инвестициялар, бизнес-стратегия.

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### **Состояние инноваций инвестиций и инновационного менеджмента в малом и среднем бизнесе Казахстана**

**Аннотация.** Инновации в последнее время стали одним из показателей коммерческого успеха компаний. Это явление происходит из-за быстрого развития новых технологий и их влияния на конкуренцию между компаниями. Основной целью настоящей статьи является исследование текущего состояния инновационной деятельности и инновационного менеджмента малых и средних предприятий Республики Казахстан. Для достижения цели статьи был проведен качественный анализ опроса 100 представителей малого и среднего бизнеса. Основные выводы указывают на следующие общие черты. Уровень доходов и инновационная активность не были напрямую связаны для предприятий-респондентов. Представители имели ограниченное представление о типах инноваций и областях их применения. После краткого информирования

респондентов авторы обнаружили значительные изменения в отношении к инвестированию в инновации. Ценность настоящей статьи связана с практической значимостью повышения инновационной активности малого и среднего бизнеса Казахстана. Более того, исследование может быть воспроизведено для других развивающихся стран Центральной Азии, чтобы выяснить, связано ли это явление с региональными особенностями. Что касается практических последствий, статья может быть использована для разработки государственных и частных образовательных программ в рамках поддержки деятельности малого и среднего бизнеса или в рамках профессиональной подготовки.

**Ключевые слова:** Инновации в МСП, инновационный менеджмент, инвестиции в инновации, бизнес-стратегия.

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