

# THE ROLE OF SMALL AND MEDIUM ENTERPRISES IN INNOVATION ACTIVITIES IN KAZAKHSTAN

## KIS ÉS KÖZÉPVÁLLALKOZÁSOK SZEREPE AZ INNOVÁCIÓS TEVÉKENYSÉGEKBEN KAZAKHSTÁNBAN

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### Abstract

This article is about the fact that there are certain factors that have a huge impact on the activities of small and medium-sized enterprises in innovation on the example of the Republic of Kazakhstan. Indicators of SMEs are reflected in the economy of the people and their country. The author used statistical analysis of indicators of innovation-based growth in the Republic of Kazakhstan. Moreover, these figures were compared to those of developed countries, which were involved in such indicators as the share of innovation of active enterprises, domestic expenditure on R&D (as a percentage of gross domestic product). According to the survey the key factors that have a major impact on innovation by SMEs were identified.

**Keywords:** SME, innovation development, innovation activity, triple helix, R&D.

### 1. Introduction

Today it is difficult to imagine any country without SMEs. Small and medium businesses often bear the brunt of the burden in the formation of the country's budget. Through the participation of SMEs technological progress, innovation are carried out, culture (Morrison, 2000) and the life of the population are developed, leading to the country's economic growth through the development of SMEs. Business has a huge impact on GDP, develops science and innovation in both developed and developing countries. There are various factors that influence the innovative development of the factors), and each the technological progress. Today, the government understands the impact that SMEs have, the government recognizes that SMEs affected not only the economy, as the main source of the budget, but also the society, through job creation, employee motivation to the development and formation of the middle class. In economically developed countries, small and medium enterprises are about 50% of GDP. Several developed countries support the development of small and medium-sized businesses. It is a kind of basis for forming the middle class, the existence and size of which determines the level of the economic development of a state.

According USAID MEP (2015) development of SMEs in the country provides the following: enhances competition, economic initiative and activity of citizens, inhibits the

growth of prices for goods and services, and motivates entrepreneurs to improve the quality of products or services, the use of innovative technologies, the increase in tax revenues, the solution of unemployment problem.

The modern development of Kazakhstan's economy does not lose the dynamics of development and transformation assigns a significant role in overcoming the technological degradation. Moreover, Kazakhstan is tasked with the transition to industrial-innovative development of the economy, with focus on supporting high-tech enterprises and the SME sector. Economic growth in Kazakhstan in the recent past was largely ensured by the intensive development of the commodity market. However, the technological backwardness of some enterprises, as well as the absence of the relationship of science and industry were a definite threat to the economic security of the country in the past. Today, the country has entered a new development path, knowing that there is the prospect of innovation for the country's future generations.

As mentioned earlier, SME is one of the sources of innovation activity in the country. It is obtained through enterprises' "triple helix" - Government - R&D - Business, where the business is the end result of innovation and technological progress conductor, which should reach the consumer. At present, there are difficulties in Kazakhstan, where the Soviet period has left its traces in the form of old equipment and world view. Currently, Kazakhstan decides to move away from dependence on natural resources in the economy and give preference to innovative projects, businesses and ideas. It creates a variety of projects that involve the authorities, science and business (e.g., ENACTUS KAZAKHSTAN). However, this is not enough, because innovations are slow and sometimes do not correspond to the needs of the population and are often under a "rough ground" to promote their innovative products and poor management. Of course, as in any young developing states, Kazakhstan faces a number of challenges and the factors influencing the innovation activity in the country. The main factors that influence the development of technological progress and innovation occur in different variations in countries with economies in transition. The author highlighted the main factors that affect the activity of innovative SMEs in Kazakhstan.

The development of SMEs in the field of innovation is influenced by many factors, some of which are: general economic conditions of the country or region, the level of entrepreneurial culture, historical experience, education, perception of entrepreneurship, education, business, time and costs, R & D.

The totality of these factors not only has an impact on entrepreneurial activity, but also provides an opportunity to assess the entrepreneurial potential of the country. However, the organization and support of SMEs is not sufficient for the full launch of the country's innovation potential. It is necessary to establish the scientific and technical institutions, namely to develop the scientific and technological capabilities in the priority areas of science.

## **2. Literature review**

Entrepreneurship is a crucial link in the development of small and medium-sized businesses, while the development of SMEs is one of the major driving forces in the growth of the economy (Lee & Tai, 2010).

Moreover, SMEs have a lot of concepts and definitions (Hooi, 2006), and everyone interprets this concept to a certain standard in each country, according to well-established business conditions (SMEinfo, 2011).

The authors of some articles claim that entrepreneurship and innovation are a direct bond, where the first one stimulates the latter one (Zhou, Tan & Uhlaner, 2007; Littunen, 2010), and will present entrepreneurs as innovators (Schumpeter, 1965 as cited in Marcati et. al., 2008; Abdullah, Shamsudin, Wahab & Hamid, 2012). Morrison (2000) found a significant relationship between business and cultural characteristics, providing a more meaningful decision for the symbiotic relationship between business and culture.

In the past half-century innovations attracted a lot of attention on behalf of the society, and especially a clear reflection of this interest can be seen in scientific literature (Cooper, 2005; Hamel and Prahalad, 1994; Kaplan and Norton, 1992), at the same time developing their products and services (Hartley, 2005; Mulgan and Albury, 2003) and understanding that the need for innovation is mandatory (Tidd and Bessant, 2005).

Moreover, exploring the innovative activity of SMEs in Kazakhstan, it is necessary to consider and to know the opinion of entrepreneurs about the challenges and constraints to innovation in Kazakhstan (Abdymanapov et al., 2016).

### **3. Materials and methods**

The methodology used for the article consists of a search in the library and the evaluation of the previous literature review on the topic related to SMEs and innovation. Searching for literature includes online and offline material for scientific articles and chapters in books. Links are based on online databases, such as the Internet Science, Scopus, Science Direct and Google Scholar (Rahman et. al., 2016).

At the same time, an analysis is made of innovative development of the Republic of Kazakhstan and its comparison with some countries (Russia, Canada, USA, France, Germany, Lithuania and others) on indicators such as GDP, GDP per capita, business activity and investment in R & D.

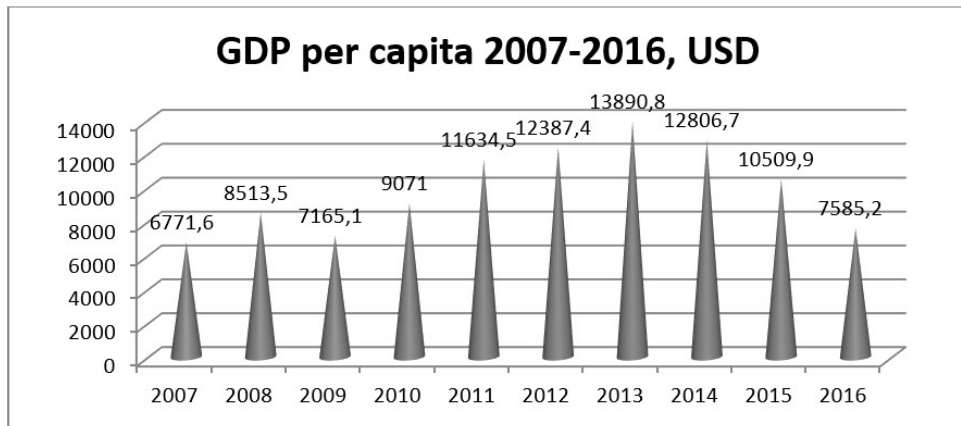
The first thing you will see in this article is how Kazakhstan's development during the decade was realized and success was attained in this period. At the same time, the author will examine how domestic expenditure on research and development activities affects the country's GDP.

### **4. Results and discussion**

Today, Kazakhstan is a young developing country. On its way of development the state has faced a number of challenges in every area of the economy and tried to find solutions, which have had their impact on the business structure and innovation processes, and is also reflected in the GDP (Figure 1).

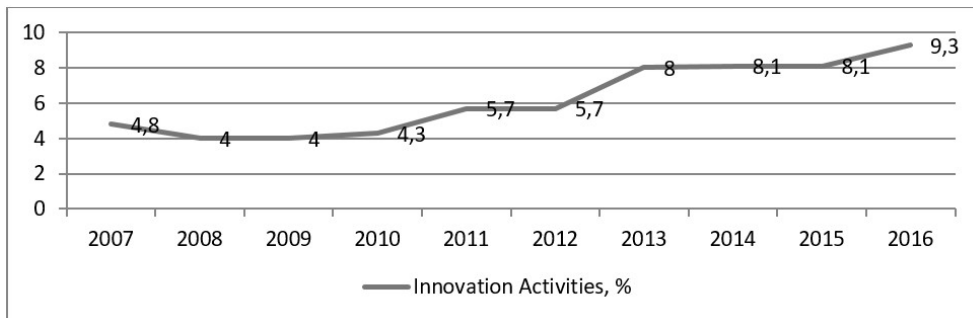
The decline in oil prices in the international community has caused great damage to state dependence on natural resources. Moreover, during the first seven years there was an increase in the 2013 GDP per capita reaching USD 13 890.8. However, in 2013 there was a decrease in GDP per capita, which was caused by a slowdown in developed economies, due to lower commodity prices, weaker global trade and capital flows. Simultaneously, the proportion of innovative products produced in relation to GDP is 0.97%, according to preliminary data of the Committee of Statistics of the Republic of Kazakhstan. Despite this fact, the share of innovative business in Kazakhstan remains low: the number of innovation-active enterprises in 2016 was 2879 – with an increase by 295 enterprises in comparison with 2015. The level of innovation activity in recent years has increased slightly and is about 9.3% (Figure 2).

**Figure 1.: Dynamics of GDP per capita from 2007–2016 year**  
**1. ábra: Dynamics egy főre jutó GDP 2007–2016 évben**



(Source: the Committee of Statistics of the Republic of Kazakhstan, 2007-2016)

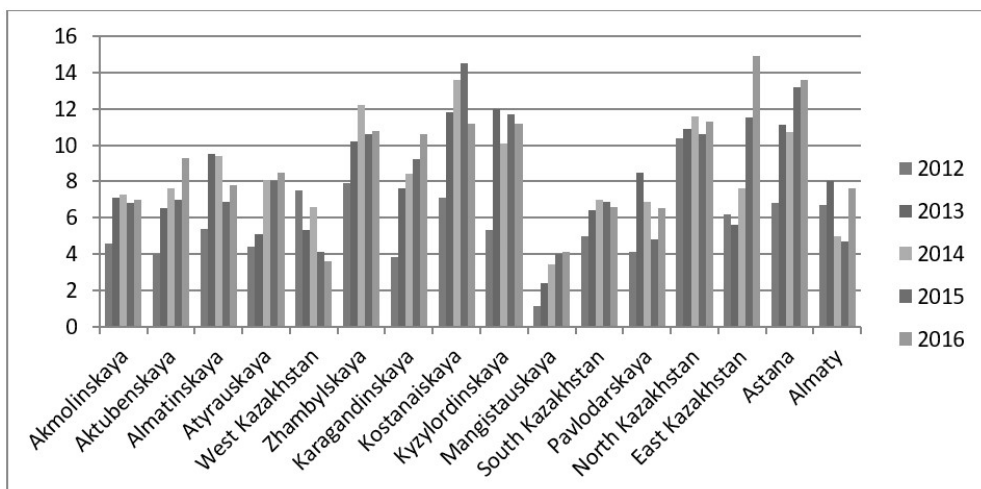
**Figure 2.: Level of innovative activity in the Republic of Kazakhstan**  
**2. ábra: Innovatív tevékenység szintje a Kazah Köztársaságban**



(Source: the Committee of Statistics of the Republic of Kazakhstan, 2007-2016)

**Figure 3.: Level of innovation activity of enterprises of all types of innovations in regions, 2012–2016**

**3. ábra: A vállalkozások innovációs szintje minden típusú innovációban a régiókban, 2012–2016**

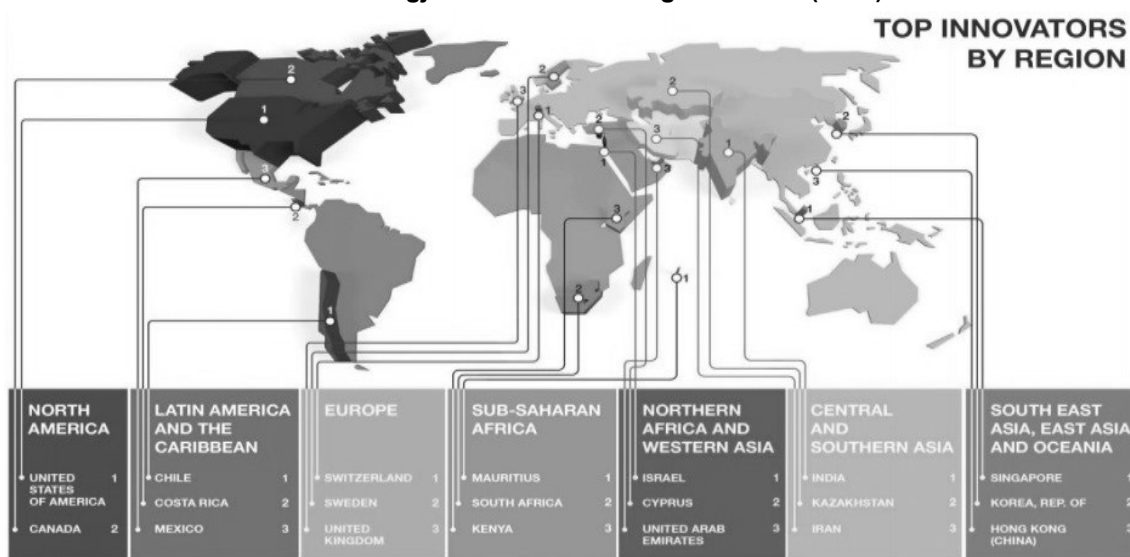


(Source: the Committee of Statistics of the Republic of Kazakhstan, 2012-2016)

According to Figure 3., leading positions in innovative activity were taken by Astana, East Kazakhstan, North Kazakhstan, Kyzylorda, Karaganda, Kostanay and Dzhambul regions in 2016. These regions are considered large in the Republic of Kazakhstan. The dynamics of growth in the level of innovation activity may be noted during the 2007-2016's, as a percentage. For example, since 2007 to the present, this rate has increased by 2.5 times and amounted to 9.3%

Today the Kazakh Government understands the importance of scientific progress and the opportunities for expansion of R & D, as a potential innovation. The government works on “triple helix” where the state will be a source of formation and R & D support development, researchers will have a wide range of opportunities for innovation and technological development and SMEs will be the end result innovating and using internal and external resources translating the idea into production.

**Figure 4.: Top innovators by regions (2016)**  
**4. ábra. A legjobb innovátorok régiók szerint (2016)**



(Source: Global Innovation Index, 2016)

Every year The Global Innovation Index ranks the innovation performance of nearly 130 countries and economies around the world. Each country is ranked according to about 82 indicators including political environment, education, infrastructure and business sophistication. Figure 4 shows the top innovative countries by region and Kazakhstan is at the top of Central and Southern Asia (Figure 4).

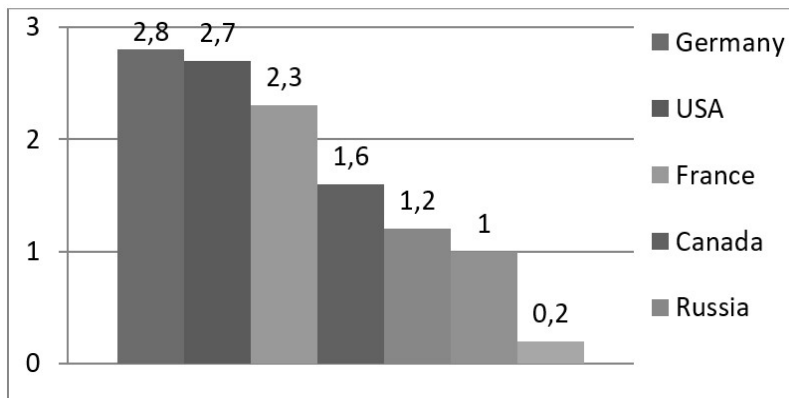
Also SME contribution to GDP is 26% in Kazakhstan, according to Global Entrepreneurship Monitoring (GEM, 2016). Comparing it with the developed countries like the US, we can see that this figure is 54%, in France 58%, in Germany 53%, in Canada 27%. Simultaneously, in developing countries SME contribution to GDP is 21% in Russia, in Lithuania 60%, in Latvia 72% according to GEM.

Each country knows how important it is to maintain the level of R&D and invest in its development. For example, South Korea took the leading position (89.5) in 2016. Among the research group of countries in the United States, the article earned 77.7 points; Germany 74.0; France 67.9; Canada 63.5, Russia 45.0; Lithuania 20.2; Kazakhstan 12.0; Latvia 9.5. In addition, the total internal expenditure on R&D in percentage of GDP is

65.9 (2.8%) in Germany, 63.1 (2.7%) in the United States, 52.1 (2.3 %) in France, 36.9 (1.6%) in Canada, 26.9 (1.2%) in Russia, 22.8 (1.0%) in Lithuania, 3.1 (0.2%) in Kazakhstan during this period (Figure 5).

**Figure 5.: Overall internal R & D expenses (2016)**

**5. ábra: Teljes belső K + F kiadások (2016)**



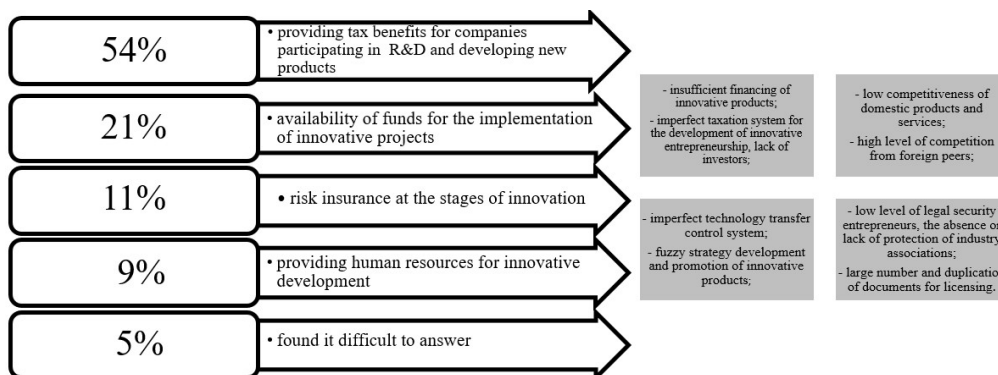
(Source: Global Innovation Index, 2016)

The main negative trends of R & D in Kazakhstan are underdeveloped “triple helix”, insufficient research and design departments in enterprises and number of employees, clear depletion mechanisms of budget control spent on R&D, low level of R&D costs, poor motivation of scientists and imperfection of laws. Moreover, the government in Kazakhstan provides support for innovative entrepreneurs through organizations as a platform between an entrepreneur and the society: “National Agency for Technological Development” JSC, “DAMU” Entrepreneurship Development Fund” JSC, “Kaznex” Corporation for Export Development and Promotion” JSC, “Investment Fund of Kazakhstan” JSC, “Development Bank of Kazakhstan” JSC.

In 2016 the scientific community in Kazakhstan (Panzabekova, A. & Ruzanov, R., 2013; Shimshikov, Z., 2013; Abdymanapov et al., 2016) conducted a survey of owners and managers of SMEs where the respondents answered the questions about what measures should stimulate innovative entrepreneurship and the main factors constraining the development of the innovative activity of business (Figure 6):

**Figure 6.: Survey of SME**

**6. ábra. KKV-felmérés**



(Source: Abdymanapov et al., 2016)

Moreover, against the backdrop of the globalization of the world economy Kazakhstan faces a number of challenges that need to be addressed; such as commodity dependence, small integration, low consumer demand for goods and services within the market, the lack of development of industrial and social infrastructure, technical and technological backwardness and lack of communication between science and manufacturing, the lack of effective interaction of the “triple helix”, the low costs of R & D, weak management, inadequate new challenges of the global economy.

In order to ensure sustainable development Kazakhstan has taken a number of policy documents: the Strategy of the Republic of Kazakhstan industrial-innovative development for 2003-2015, the Program for the speeding up and development of the national innovation system of Kazakhstan for 2005-2015, the Program of Technological Development of Kazakhstan up to 2015, Strategic Development Plan Kazakhstan till 2020 and others.

According to the Strategic Plan of Development of Kazakhstan till 2020, one of the priorities is the development of the economy and the transition from raw material to the development of industrial-innovative development. Such transitions involve the development of a national innovation system (NIS), which is a system of interconnected institutions to create, store, transfer knowledge and technology, which has an internal structure, which is set by the government to influence the innovation process. At the same time, it is necessary to allocate NIS as a set of interconnected structures that connects the “triple helix”, bringing product innovation to production (Kinasheva and Akhmetova, 2016).

## 5. Conclusion

Obstacles of cooperation between universities and industry in Kazakhstan are similar to countries with transit economies (Renko, 2004), where R & D is not familiar with the needs of the society. At the same time, the government should encourage companies to cooperate with research centers in the field of innovation. On the other hand, research centers should also conduct high-quality research, which is relevant and appropriate to the current and future needs of the society, as well as they should work to improve R & D and to increase confidence in SMEs. Moreover, the government needs to take into account and revise the strategic program, where the effectiveness of SME linkages and research centers will be more successful. Further, the experience of developed countries is necessary to be studied in details the developed economies, aiming at innovative development, developing and promoting the work of the “triple helix” effectively and supporting innovative SME projects in the production phase.

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