

Small Innovative Business in Science Cities: Main Problems and Development Prospects

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Abstract—In the course of the study, the authors indicated an increase in the importance of creating innovations by small enterprises, taking into account their ability to adapt quickly, flexibility, and mobility in comparison with large business. Modern forms of small innovative business are start-ups and engineering small business. It is noted that innovative activity in Russia is characterized by weak indicators, and therefore, it is small business in science cities that can become an activator of this activity. The global epidemic had an extremely negative impact on the state of small innovative business CoVid-19. During its period, there was a sharp drop in demand and a decrease in the number of enterprises. The authors have identified a list of measures to support small businesses during quarantine measures, but small businesses need additional sources of development. Statistical reporting made it possible to assess the share of small innovative business in the Central Federal District of the country, the costs of enterprises for innovative activities. Municipal statistics are presented on the example of the science city of Korolev in the form of an analysis of the dynamics of the number of small enterprises and their turnover. It was noted that until the end of 2019, the number of operating small enterprises remained at approximately the same level, but since the beginning of 2020, there has been a decrease. Based on the analysis, the authors were able to identify the main problems of the development of innovative activities of small businesses in science cities, taking into account the current situation and determine the promising areas of modern business after the end of quarantine restrictions. One of the ways to solve the problem of enhancing innovation activity, the authors propose a project of cluster interaction of small innovative enterprises with city-forming corporations and scientific organizations.

Keywords—*development, innovation, science cities, small innovative business*

I. INTRODUCTION

In modern economic realities, small innovative business plays an important role in the implementation of the President's task to further increase labor productivity and the country's gross national product. Let us note the role of science cities as

innovative territories for the development of small business, which can directly become a stimulator of scientific and technological progress [1, 2].

It is necessary to understand that the importance of innovations in the creation and successful operation of businesses, including small ones, has been increasing recently. It is obvious that the most significant innovative projects for the production of high-tech goods can be implemented in most cases only by large corporations. However, innovation can be more than just global [3-6]. Increasingly, there is a tendency to develop innovative products or services specifically by small businesses, for example, in the field of software, Internet technologies, engineering, maintenance of new equipment, etc. First of all, this is due to mobility, quick adaptation in the market, flexibility, willingness to take risks, motivation, narrow specialization and striving for scientific and informational progress [7-10]. Currently, the main forms of small innovative business in science cities are start-ups and engineering small business, connecting science and production in an effective way.

II. PROBLEM STATEMENT

Russia possesses a certain innovative and technological potential, but at the same time differs in weak science-intensive indicators. In these conditions, science cities become a key point of innovative growth. One of the main tools for achieving high rates of small innovative business can be the creation of innovative business centers, consulting organizations, incubators, technology parks, marketing and effective management centers, conducting complex R&D together with other enterprises and their cluster interaction, which can increase the efficiency of the development of this industry.

However, due to the introduction of quarantine restrictions in the situation with global epidemic of CoVid-19, small innovative businesses in science cities faced a drop in demand for their products. One could observe a tendency of a sharp

decline in business and innovation activity of small businesses, which in the future will obviously lead to a significant reduction in their number in general. This state of affairs makes it necessary to analyze the state of this industry in the current crisis conditions and determine the prospects for its development.

III. RESEARCH QUESTIONS

Currently, measures are being taken to further develop small innovative businesses. Among them, state support measures can be distinguished, including reducing the tax burden, providing preferential lending, deferring rental payments, suspending inspections, reducing insurance premiums, etc. Nevertheless, problems remain, without which it becomes impossible to further develop this industry.

IV. PURPOSE OF THE STUDY

The purpose of the study is to identify problems and find ways and measures for the development of small innovative business in science cities in relation to the organization of their cluster interaction with other small and large enterprises on the example of the largest science city in Russia Korolev.

In accordance with this goal, it is important to assess the state of small innovative business in the Russian Federation, in particular, to analyze statistical data on the number of small enterprises in the Russian Federation as a whole and in the specified science city, small business turnover, and its costs for innovative activities. The designation of modern factors restraining the development of this industry, the determination of the most relevant areas in small business, taking into account modern economic realities and the formation of prospects for its development in the post-quarantine period are important in this study.

V. RESEARCH METHODS

The theoretical and methodological basis of the research is based on the generalization of the research carried out by foreign and domestic scientists and economists in the field of small innovative business. In the course of the research, methods of processing statistical data, induction and deduction, analysis, formalization, graphic representation, tabular method were used. In addition, empirical methods were used, such as forecasting and the method of expert assessments [11, 12]. The research results are formulated by the authors on the basis of the accumulation of scientific and economic literature. Economic indicators are interpreted using the official websites of statistical reporting.

VI. RESULTS

According to Rosstat data, the share of small innovative enterprises in some subjects of the Central Federal District of the Russian Federation is distributed as follows (Fig. 1).

As you can see, the share of small enterprises operating in the field of innovation prevails at the end of 2019 in the Lipetsk region (13%) and in the capital of Russia (11%). Moreover, since 2015, there has been a growth dynamics of about 30%.

However, in the Moscow region, the indicators are low and significantly lag behind the city of Moscow, but over the past five years, positive dynamics can be observed. In general, small innovative enterprises in the regions make up only a small fraction of the total number of small businesses. This indicates

the need to continue to develop this industry at the level of regions and science cities. This fact especially concerns Moscow region, where the most significant science cities for science-intensive development are concentrated: Korolev, Zhukovsky, Reutov, Dubna, Protvino, etc.

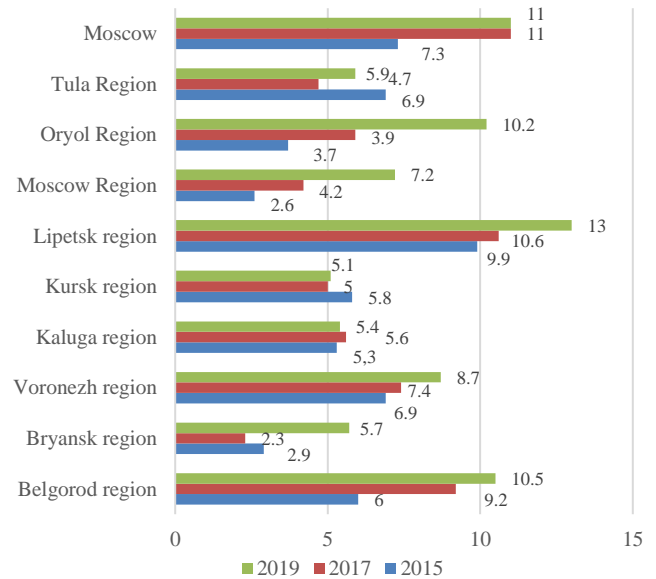


Fig. 1. The share of small innovative enterprises in the context of the subjects of the Central Federal District of the Russian Federation from the total number of small enterprises from 2015 to 2019 in % [13]

The costs of innovative activities of small enterprises in some regions of the Central Federal District of the Russian Federation for 2015, 2017, 2019 are distributed as follows (Fig. 2-4).

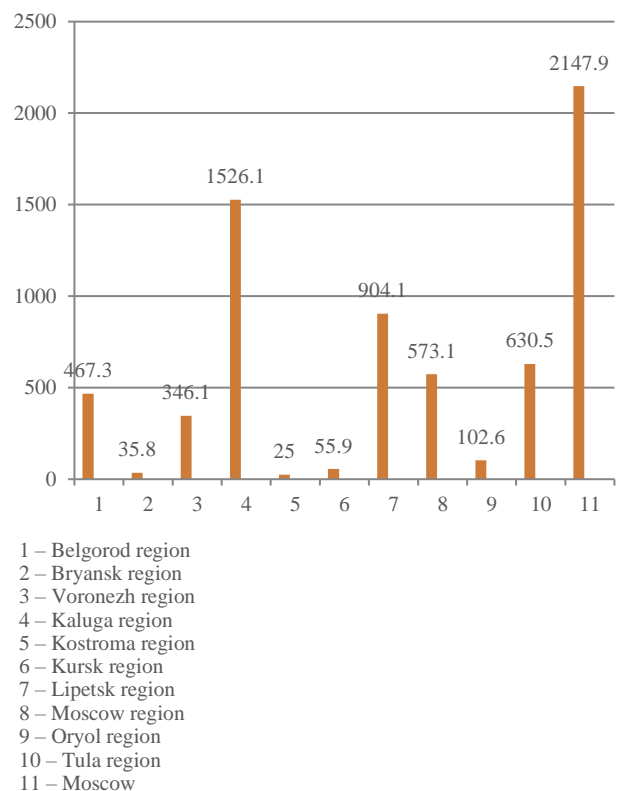
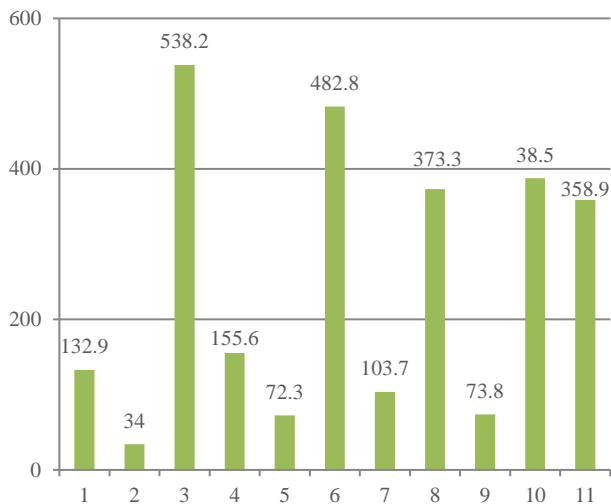
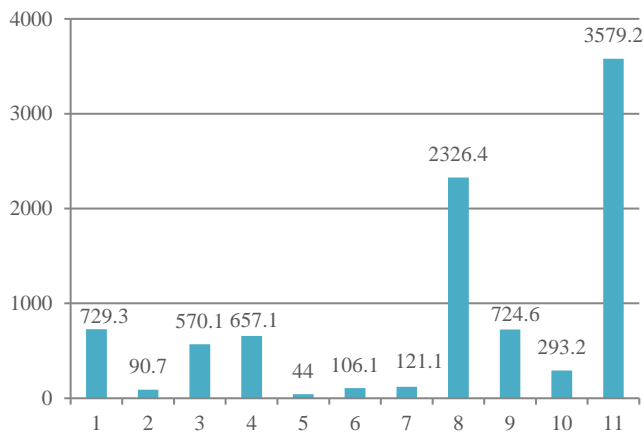


Fig. 2. Costs of small innovative enterprises in the context of subjects of the Central Federal District of the Russian Federation in 2015, million rubles [13]



- 1 – Belgorod region
- 2 – Bryansk region
- 3 – Voronezh region
- 4 – Kaluga region
- 5 – Kostroma region
- 6 – Kursk region
- 7 – Lipetsk region
- 8 – Moscow region
- 9 – Oryol region
- 10 – Tula region
- 11 – Moscow

Fig. 3. Costs of small innovative enterprises in the context of constituent entities of the Central Federal District of the Russian Federation in 2017, million rubles [13]



- 1 – Belgorod region
- 2 – Bryansk region
- 3 – Voronezh region
- 4 – Kaluga region
- 5 – Kostroma region
- 6 – Kursk region
- 7 – Lipetsk region
- 8 – Moscow region
- 9 – Oryol region
- 10 – Tula region
- 11 – Moscow

Fig. 4. Costs of small innovative enterprises in the context of subjects of the Central Federal District of the Russian Federation in 2019, million rubles [13]

The data presented indicate that the key regions in terms of the level of costs for the implementation of innovative activities by small enterprises over the past four years are the Moscow Region (2326.4 million rubles) and Moscow (3579.2 million rubles). In addition, since 2017, costs in the metropolitan region

have increased fourfold, which may indicate a good basis for the development of small innovative business in large science cities of the region.

Moving on to analyzing the situation in the studied science city, one should turn to municipal statistics reflecting the number of small businesses over the past five years (Fig. 5).

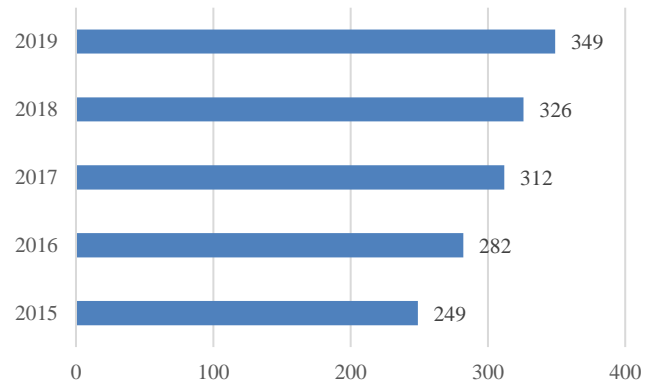


Fig. 5. The number of small innovative enterprises in the Korolev science city from 2015 to 2019 [14]

According to the Federal Tax Service, the number of small enterprises in the Korolev Science City engaged in innovative activities has grown to 349 units in 5 years.

In addition, the turnover of small businesses in the science city is characterized by positive dynamics (Fig. 6).

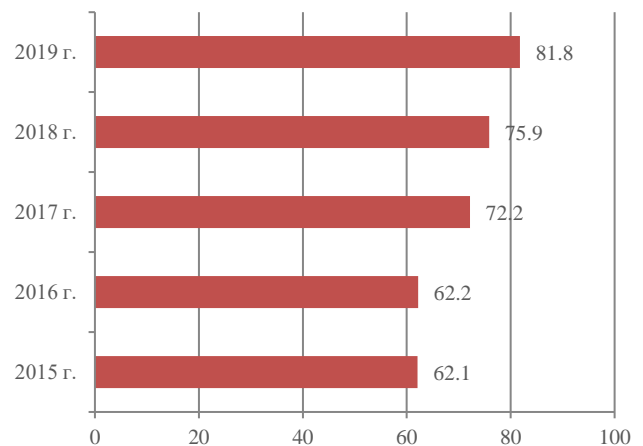


Fig. 6. Turnover of small innovative enterprises in the science city of Korolev from 2015 to 2019, million rubles [14]

According to Fig. 6, the turnover of small businesses in 5 years increased by 1.5 times and at the end of 2019 amounted to 81.8 million rubles.

If at the end of this period, some positive dynamics can still be observed, then since the beginning of 2020, due to the pandemic, small innovative businesses have faced a drop in performance indicators. Thus, according to the Federal Tax Service, the number of small businesses decreased by 7.6% over the month. As of July 2020, the number of small businesses was 6.05 million, while a month later this figure dropped to 5.6 million [14].

In addition, these data confirm that small businesses were exposed to the negative impact of restrictive measures during

the quarantine. In the country as a whole, the most economically vulnerable sectors were catering, tourism, sports, the beauty industry and shopping centers. In science cities, small businesses in the machine-building, rocket-space and aviation areas have suffered the most.

VII. DISCUSSION

Thus, the main problems of small innovative business in science cities, taking into account post-quarantine conditions, can be identified:

- protracted renewal of all business processes of small businesses;
- decrease in demand, which entails a drop in the turnover of innovative activities of small enterprises;
- the presence of arrears in the payment of wages to employees, delayed rental payments;
- difficulties with repayment of loans;
- the general problem of a lack of material resources due to the crisis for the implementation of innovative activities, in particular for R&D.

At the same time, the authors propose to pay special attention to the areas of small innovative business, which can be updated after the epidemic:

- business related to health: this area includes not only pharmacies, but also the organization of sports clubs, the sale of sports nutrition, the collection of medicinal plants, laboratories for the collection of tests, cleaning companies that disinfect premises;
- online business: most specialists in different fields are switching to a similar business format, where chefs of the highest category can teach online culinary courses, fitness trainers conduct online classes, guides - virtual excursions;
- online education: the quarantine consequences led to the challenge of the need for online training and retraining not only of small business representatives, but also of its employees;
- food delivery: this direction will always be in demand, especially products of daily demand [15].

Returning to the problem of the complexity of the implementation of innovative activities by small enterprises in a crisis situation, which arose due to arrears in rent, wages, lack of resources, etc., the authors propose to organize their support in the form of cluster interaction. Such interaction should be organized with the city-forming state enterprises of the science city and the scientific sector, which are less affected by the epidemiological impact and have a more stable position on the market.

The project of cluster interaction is shown in Fig.7.

The peculiarity of the cluster is the preservation of the legal and economic independence of all its participants. Thus, participants can organize cooperation with other structures outside the cluster, attracting additional prospects for the development of the industry.

Small innovative enterprises of the science city		
Scientific sector of the science city	Preferential use of fixed assets of enterprises and scientific organizations for research	City-forming enterprises of the science city
	City-forming enterprises can act as a consultant for a small business having significant experience	
	A large enterprise can act as a surety to obtain additional sources of financing	
	R&D	

Fig. 7. Cluster interaction of small business with city-forming enterprises and the scientific sector

The list of possible interaction within the cluster proposed by the authors reflects financial, consulting, surety and production and technological assistance in the development of innovative activities of small businesses in the science city. In accordance with the proposed cluster, cooperation between its members can begin with a search for a common innovative idea. During the implementation of the innovation, participants can build an intellectual property management system and the process of commercializing the created innovation. Such a cluster will allow combining the advantages of all its sectors and increasing the efficiency of production factors, which can become one of the forms of development of small innovative business in science cities.

VIII. CONCLUSION

Undoubtedly, the global epidemic of CoVid-19 has radically changed the state and model of small innovative business, and that is why it is now necessary to carefully approach the development of new tools and methods for its development in order to maintain a stable position in the innovation market in the current crisis conditions. We need not only a well-structured state policy to implement measures to support the affected industries of small innovative business, but also help from large state-owned enterprises and the scientific community on the basis of a united cluster.

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