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# RECOMMENDATIONS FOR IMPROVING THE EFFICIENCY OF INNOVATION ACTIVITIES OF ENTREPRENEURSHIP IN THE CONDITIONS OF THE RUSSIAN-UKRAINIAN WAR

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**Introduction**

The innovative activity of Ukrainian enterprises and its stimulation are connected with certain difficulties in the conditions of the Russian-Ukrainian war, which significantly limit the possibilities of modernization of the economy. To overcome the dependence on the natural resources of the Russian Federation and Belarus, and to mitigate the effects of the economic crisis caused by the beginning of the ATO in 2014 and military aggression against Ukraine in 2022, it is necessary to review regional development priorities and improve state policy to support innovation.

**Problem statement and its relation to important scientific or practical tasks.** In recent years, innovation has been increasingly viewed in the context of regional development and local innovation systems. This approach focuses on factors such as the spatial proximity of regions, local conditions, the specifics of human capital and interregional cooperation. The same issues include, in particular, the concepts of smart cities and smart regional specialization used in the EU and many other countries.

The innovative activity of enterprises is closely connected with the long-term vision of technological development of the country. The impact of human activities on the environment and the challenges of sustainable development give relevance to "responsible research and innovation", i.e. forecasting and assessing their possible consequences.

Of particular importance is the task of identifying factors that contribute to the innovative activity of companies in the regional context in both peacetime and martial law. The field of innovation requires concerted action by companies, governments, universities and research organizations.

**Analysis of recent researches and publications, which have initiated problem solution, the author relies on.** Knowledge is a key resource of the modern economy, and innovation has become ubiquitous. This is due to the huge array of literature on innovation and technological development, in which the authors explore the fundamental question of the role of innovation in achieving economic growth. As one of the answers, a new theory of (endogenous) growth was put forward[1]. If it was initially believed that universal access to knowledge provides all countries with equal opportunities for technological development, the theory of "knowledge flow" has shown that in some cases access to them is determined by geographical proximity. "Closed" (limited access) knowledge that has implicit innovative properties is created exclusively through the interaction of the subjects of the innovation system.

The study of innovation is devoted to identifying the conditions or factors of production and dissemination of knowledge, especially technological as the most productive in terms of innovation. The key question remains the nature of technological development, in which processes and institutions play a crucial role in it. Authors of the concept of "new innovation economy"[2] seek an answer to this question in the analysis of the institutional environment in which innovation processes take place. The economics of innovation has been influenced by various approaches, including evolutionary, especially the new institutional economy proposed in the works[3], and theories of interactive learning. The new institutional economy is based on informal social and formal legal norms and rules, i.e. institutions, from which researchers conclude that the social roots of interactive, iterative and cumulative processes of cognition, which cannot be understood without institutional and cultural processes[4].

An effective approach to the study of innovation and technological development of the economy is the concept of the national innovation system. According to her, knowledge is the most important economic resource and is created and accumulated during the interactive and cumulative processes of innovation, embedded in the national institutional context, which determines the results of innovation[5].

Increasing globalization, according to researchers in the field of regional development, economic geography and innovation, may call into question the concept of a national innovation system, as the most important elements of the innovation process remain regional rather than national in nature[6]. However, the bulk of social

[1] Romer P. M. Endogenous technological change. *Journal of Political Economy*. 1990. Vol. 98. № 5. Pt. 2. P. 71–102.

[2] Nelson R. R. National Innovation Systems: A Comparative Analysis. 1993. Oxford : Oxford University Press.

[3] North D. Institutions, institutional change and economic performance. 1990. Cambridge : Cambridge University Press.

[4] Carlsson B., Jacobsson S., Holmén M., Rickne A. Innovation systems: Analytical and methodological issues. *Research Policy*. 2002. Vol. 31. № 2. P. 233–245.

[5] Ács Z.J., Autio E., Szerb L. National Systems of Entrepreneurship: Measurement Issues and Policy Implications. *Research Policy*. 2014. Vol. 43. № 3. P. 476–494.

[6] Cooke P. Regional Innovation Systems, Clusters, and Knowledge Economy. *Industrial and Corporate Change*. 2001. Vol. 10. № 4. P. 945–974.

conventions that define the processes of cognition and technological development are formed at the national level[7]. At the same time, the subnational level (clusters and regions) is becoming increasingly important. National institutions can influence regional, sectoral and technological innovation systems in different ways, and not all institutions are national. If the former are important primarily for large business, then small and medium enterprises are critically dependent on regional institutions. All these theories (in fact, all the literature on innovation) can be used to develop a comprehensive model of regional economic development based on technology by including them in a more general model of regional economic growth. Thus arose the concept of a regional innovation system.

A systemic perspective has also emerged in the field of strategic management, where the concept of "business systems" has become especially popular. The national business system takes into account important structural and strategic factors that determine the share of value created within the ecosystem, which can expect a particular firm, depending on how it organizes its interaction with other participants in the ecosystem[8]. The fundamental difference between the concepts of national business system and national innovation system is the focus of the analysis: if the former explains the specifics of the organization and behaviour of firms in different countries, the latter underpins innovation and emphasizes the role of constraints on the transfer of technical competencies. However, despite these differences, both concepts work with the national institutional structure. All these studies do not lose their value for the development of our country's economy in the Russian-Ukrainian war.

**Identification of previously unresolved matters of the generic problem the article deals with.** Research on economic development (reflecting a set of interrelated concepts, including the national innovation system and the national business system used for strategic management purposes) largely ignores the role of entrepreneurs. They are usually about individual "firms" or "enterprises", while innovations are created by entrepreneurs who combine existing elements of knowledge and generate new value (product). At the same time, in the course of their activities (creating a company and ensuring its work), entrepreneurs organize jobs and achieve economic growth (results), which is especially important for rebuilding the economy of our country in the Russian-Ukrainian war.

**Goal statement (task statement).** The goal of the study is to identify factors influencing the innovation activities of Ukrainian small and medium-sized firms in regional innovation systems, and the findings may be useful for improving the effectiveness of local innovation and interaction of its participants in the Russian-Ukrainian war. As a result, these issues are important for the economic development of individual regions and the country as a whole in terms of both peacetime and military aggression against Ukraine, as well as in the process of further reconstruction of Ukraine's economy.

**Presentation of research material with full justification of findings.** Economic liberalization encourages many companies in developing countries to actively borrow technological and managerial knowledge abroad to strengthen their competitive position. Factors of increasing competitiveness include more qualified personnel, the potential to increase capital intensity, scalability of production based on a combination of different resources, knowledge, technology development and others.

Innovation as an integral part of economic activity has always attracted the attention of representatives of various fields of social and economic sciences. Continuing the ideas of Joseph Schumpeter's classic works, modern researchers sometimes understand innovation as the creation of new technologies or the borrowing of existing ones.

Although innovations are related to the production of new goods and services, they are not limited to them. Innovation is the introduction of a new or significantly improved product (good or service), process, marketing or organizational method into business practice, workplace organization or external relations. According to the level of novelty, innovations are divided into incremental (advanced) and radical (which have no analogues in the world). The process of creating innovations is based on a variety of knowledge, involves numerous participants from the organization and its external environment, is characterized by internal and inter-organizational ties that form a closely integrated environment. Therefore, the involvement of employees, users, investors and other stakeholders in this process is of great importance for the company. Any innovation, including technological, is not limited to the emergence of new means of production. They include new social practices, as well as institutions that change the nature of human interaction with each other and with the world around them.

Innovation often refers to new products and services that enable companies to reap economic benefits. The OECD has proposed an expanded definition, which distinguishes four types of innovation: product, process, marketing and organizational (Table 1).

There are active discussions about the classification of ten types of innovations, grouped into three categories (Table 2).

[7] Freeman C. Continental, National and Sub-national Innovation Systems – Complementarity and Economic Growth. *Research Policy*. 2002. Vol. 31. № 2. P. 191–211.

[8] Whitley R. The Social Construct of Economic Actors: Institutions and Types of Firms in Europe and Other Market Economies. *The Changing European Firm / Ed. R. Whitley*. 1996. London : Routledge. P. 39–66.

Table 1

**Types of innovations according to the OECD classification[9]**

| Types of innovations | |
|---|---|
| Product innovations | New or significantly improved products or services. These include significant improvements in specifications, components and materials, firmware, user-friendliness, or other functionalities. |
| Process innovations | New or significantly improved methods of product production or delivery. These include significant changes in technology, production equipment and / or software. |
| Marketing innovations | New marketing techniques, including significant changes in product design or packaging, placement, market promotion or pricing. |
| Organizational innovations | New organizational methods in the company's business practice, organization of workplaces or external relations. |

Many studies analyse the factors that influence firms' propensity to innovate. Yes, Liliana Bozic and Valeria Botric[10] showed the statistical significance of subsidies, pressure from consumers and foreign competitors, political risks, tax rates and other effects. The authors, in particular, emphasize that filling the shortage of skilled labour can play a favourable role in stimulating innovation activity.

Table 2

**Categories of innovations[11]**

| Classification of innovations | |
|---|---|
| **Category** | **Types of innovations** |
| Configuration | *Profit model, network* (collaboration to create added value) |
| | *Structure* (Human Resources Management) |
| | *Process* (Use of advanced methods) |
| Offer | *Product characteristics* (Properties and functionality) |
| | *Product system* (ancillary / additional products and services) |
| Usage experience | *Services* (support and additional services that increase the attractiveness of products) |
| | *Channels* (methods of delivery of products and provision of services to consumers and users) |
| | *Brand* (brand of product and manufacturer) |
| | *Interaction with consumers* (Getting feedback, etc.) |

As Martin Srholec points out[12], Innovative companies from the catching-up countries are primarily interested in such characteristics of the institutional environment as the business climate and stable "rules of the game" in the market. Institutional indicators are the timing of starting a business and resolving commercial disputes, the stability of the employment index, which reflects changes in hiring and firing conditions, the level of democracy and maximum tax rates. The importance of most of these factors indicates the need to take them into account in assessing innovation activity.

In the work of Martin Junge and his colleagues[13] the connection between the level of education of employees and the activity of companies in the field of product, process, organizational and marketing innovations based on the extended Cobb-Douglas function and the profit model is investigated. The authors note that teaching technical sciences has a positive effect on the development of innovations of all types, and social sciences and humanities are especially important for organizational and marketing innovations. It is also stated that firms that create innovations of the latter two types are more productive compared to those that are engaged in only one of them. The same is true for companies that practice process and organizational innovation.

Foreign direct investment (FDI) remains a significant factor in innovation development. It is believed that their influx from abroad stimulates overall economic growth, and in particular innovation, due to the flow effects described in detail in the literature and increased competition in the market.

At the same time, later research emphasizes the ambiguity of the effects of FDI on national business. For example, Francisco Garcia and co-authors on the example of Spanish companies analyse the dynamics of FDI and innovation, the relationship between which is manifested in increased competition, reduced costs of all market players, technology transfer[14]. The authors note that competition can have a negative effect on innovation, and the risks of foreign investment are related to the fact that innovation dynamics depend on the decisions of foreign partners. The active influx of foreign investment leads to the displacement of local enterprises

[9] OECD. Defining innovation. 2018. URL : https://www.oecd.org/site/innovationstrategy/defininginnovation.htm

[10] Bozic L., Botric V. Innovation Propensity in the EU Candidate Countries. *Transition Studies Review*. 2011. Vol. 18. P. 405–417.

[11] Keeley L., Pikkel R., Quinn B., Walters H. Ten types of innovation. *Hoboken*. 2013. N. J : Wiley.

[12] Srholec M. A multilevel analysis of innovation in developing countries. *Industrial and Corporate Change*. 2011. Vol. 20. № 6. P. 1539–1569.

[13] Junge M., Severgnini B., Srensen A. Evidence on the Impact of Education on Innovation and Productivity. *Copenhagen Business School Working Paper*. 2012. Vol. 2. Copenhagen : Copenhagen Business School.

[14] García F., Jin B., Salomon R. Does inward foreign direct investment improve the innovative performance of local firms? *Research Policy*. 2013. Vol. 42. P. 231–244.

in less profitable niches, which suppresses their innovation. The bigger the business, the greater the opportunity to cut costs through economies of scale and the more resources for long-term investment, including the development of new technologies and products, ultimately, the likelihood of innovation.

Particular attention in wartime in Ukraine should be paid to the development of the national innovation system, the reasons for its lack of efficiency in the creation, dissemination and application of knowledge, motivation of economic agents, technological externalities and innovation risks. The influence of state development institutions on the innovative behaviour of players should be taken into account, including positive changes in the innovative activity of companies due to the application of appropriate support measures.

Negative factors in the formation of the segment of innovative entrepreneurship are:

• low level of labour productivity, inherited from the former socio-economic system. As a result, own production is more expensive than imports, and therefore trade and services (catering, construction, repair, etc.) become a natural niche for private enterprise;

• low effective demand of the population, which encourages entrepreneurs in the pursuit of profitability to go into the informal economy.

Thus, we can identify the main groups of indicators used in research on innovation of small and medium enterprises at both national and regional levels[15]:

1) microeconomic indicators of business, including revenue, size, form of ownership, participation in import and export activities, other indicators of costs and productivity, including the cost of innovation and the number of employees in this area;

2) institutional indicators that characterize the markets in which the company operates: investment attractiveness, risks, tax regulation, entry threshold, bureaucratic features of the country, etc.;

3) indicators of human capital: the quality of the workforce, the number of graduates of higher education institutions, the cost of training employees;

4) indicators of state support, which are usually expressed in the amount of subsidies, grants or benefits and the availability of government procurement;

5) other indicators, including economic characteristics of the region: GRP, openness, etc.

The larger the company, the higher its propensity to innovate. Large enterprises tend to have greater opportunities to invest in intellectual innovation development and access the resources they need. International coverage and subsidies play a positive role. As subsidies are allocated for various needs, companies can direct part of them to innovation.

Another incentive to innovate is to increase competition. In this case, companies can gain an advantage by modifying, improving or differentiating their products from the proposals of other manufacturers, thereby increasing demand for it.

The introduction of innovations by companies is positively related to the overall innovation activity in the region and the amount of foreign direct investment. By sharing experience and technology, companies can strengthen their market position. Corruption, limited financial support and insufficient skills of the workforce hinder the implementation of innovations in companies.

**Conclusions**

The most important task of Ukraine's economic growth policy in the Russian-Ukrainian war is the transition from increasing costs to creating innovation. Effective innovation policy is impossible without effective tools to fight corruption, reform economic and financial institutions. Providing subsidies and tax benefits will not relieve the company of these difficulties. Given the unsatisfactory quality of education, special attention should be paid to supporting higher education institutions that train highly qualified specialists in priority areas and cooperate with innovative companies. It is equally important to develop research, expand opportunities for business, universities and the state. Personal initiative on the part of individual company executives, researchers and government officials, as well as state actions to improve the climate for entrepreneurship and science development in both peacetime and wartime, play a key role in this.

[15] Chepurenko A. Entrepreneurial Activity in Post-Socialist Countries: Methodology and Research Limitations. *Foresight and STI Governance.* 2017. vol. 11, no 3, pp. 11–24.

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