

Volume 22, Special Issue 1**Print ISSN: 1098-8394;****Online ISSN: 1528-2651**

ENTREPRENEURIAL MODEL OF LOCAL INNOVATION DEVELOPMENT IN THE EUROPEAN UNION ECONOMY

Nadya Mironova, University of National and World Economy, Bulgaria**Noncho Dimitrov, University of National and World Economy, Bulgaria****Yuri Tsenkov, University of National and World Economy, Bulgaria**

ABSTRACT

This paper studies the local innovation development in the economy of the European Union through the description of conditions and factors of formation of competitive models of the technological collaboration of the state, science and business representatives. It was proved that the poly level complementary entrepreneurial model of the financial support of the local innovative development is successfully functioning in the European Union, and the most part of funds comes from national and supranational sources. We considered the innovation development stimulation mechanisms for small and middle size business.

Keywords: Entrepreneurial Model, Local Innovation Development, Start-Ups, Multiplicative Effect, Cluster, Competitiveness.

JEL Classifications: I2, F6

INTRODUCTION

With the growth of the level of openness of economies, transnational corporations have taken over part of the functions of the centres of global decision making, which resulted in the formation of international production and distribution networks. The current manifestation of aggravation of international competition is the maximum use of local advantages by leading TNCs, which results in an increase in the local concentration of their economic and scientific potential. This contributed to the formation of new forms of accumulation of entrepreneurial capital-spatially localized innovation structures, the rapid development of which was due to the vertical disintegration of production chains and the expansion of flexible decentralized management models, as well as, in part, virtualization of business activities.

The most dynamic process of localization of innovation activity has been found in integration groups, in particular in the European Union, where much of the functions of economic development management are delegated to a supranational level, resulting in the development of universal rules of competition within the common economic space. From these standpoints, the EU's institutional and regulatory framework is unique on the grounds that it provides equally effective solutions in stimulation innovation entrepreneurship both for technology leaders (Germany, the Netherlands, Finland, and Sweden) and for the new EU member states, which included with the first to the integration community.

The aim of this paper is to develop a methodology for systematic research on local innovation development in the European Union economy, describe the conditions and factors for the formation of competitive models of technological cooperation between representatives of the state, science and business, and the justification of the paradigm of effective localization of innovation entrepreneurship and improvement of the polystyrene system of its regulation, on this basis.

REVIEW OF PREVIOUS STUDIES

The definition of local and regional development is not unambiguous in scientific literature, since awareness of this process is not only differentiated between countries (Morgan, 2017) but also evolves over time (Pike et al., 2017). The present stage of the development of regional studies is associated with an increase in scientific interest in researching the localization of innovation development in the economic literature. It has been established that innovations are not evenly distributed by regions, and innovation activity has the ability to geographically concentrate (Tetiana et al., 2018a:2018b). In addition, even regions with similar innovation potential show quite different economic growth trends (Tripl et al., 2018). Such methodological and identification differences led to the formation of the foundations of the latest interdisciplinary scientific trend "*new regionalism*" or "*localism*".

METHODS

The research methods are based on general scientific principles and fundamental positions of economic theory, theory of globalization, trans-nationalization and global regionalistics, and modelling of economic processes that take place in the sphere of research and innovation activity. Methodological basis of the research are abstraction methods, dialectics, logical-structural and system approaches to the analysis of trends and mechanisms of local innovation development in the economy of the integration group.

RESULTS AND DISCUSSION

Several models of national innovation policy were identified based on criteria of target orientation for fundamental or applied research, composition and ratio of instruments, as well as innovative activity of the private sector. The first model that unites countries, which are focused on competitive academic research and development work (Ireland, Malta, Poland, Slovenia) is characterized by significant influence of European structural funds, the prevalence of competitive selection of academic research and development, and the active provision of tax incentives. A model oriented on collaborative academic R&D work (Germany, Finland, Sweden, Greece, Estonia, and Latvia) is characterized by the dominance of cooperative R&D work, intensive development of venture capital markets and debt financing of innovations, as well as the minimum volume of tax benefits. The model of innovation policy based on commercialization (Great Britain, Italy, the Netherlands, and France) focuses on stimulation of the implementation of the results of state research and development work, support of the transfer of technology and entrepreneurship, development of venture capital markets and active use of fiscal incentives. For Austria, Belgium, Denmark, Spain, Portugal, Hungary and the Czech Republic, there is a tendency to support the private sector with a focus on direct support for innovation and R&D work, competitive financing of R&D work and fiscal stimulation of

innovation development. The model is focused on both academic and private R&D work (Bulgaria, Lithuania, Luxembourg, Cyprus, Romania, and Slovakia) and provides significant support from the EU structural funds; financing activities of academic organizations and the minimum level of tax privileges.

The general trends of the innovation entrepreneurship support model in the EU are: the distribution of programs of scientific-and-technical cooperation of business, academic institutions and state institutions; decentralization of management systems for innovation development; involvement of regulatory entities of all levels in the system of complementary financing of local innovation development; spreading of state support of innovation activity not only on small and medium enterprises, but on large companies; an increase in the proportion of collaborative research programs, competitive funding of academic institutions, direct financing of R&D works and innovations in the private sector with the simultaneous reduction of the share of innovative skills development programs, public campaigns in the field of innovation promotion, individual subsidies and grants; increase in tools for stimulation of start-ups and venture capital investments; growth in the importance of commercialization of the latest technologies, etc.

It has been proved that theories of national, regional and local innovation systems have become the foundation of the modern innovation policy of the EU member states. In all investigated regions and localities, programs for the development of scientific and technical cooperation between business representatives, higher educational institutions and state research organizations must be applied. It has also been established that even in regions with underdeveloped scientific and technical potential and a depressed state of the economy, the innovation policy should be comprehensive, covering all stages of the innovation process - from fundamental and applied developments to the introduction of new products, services or technologies into the market.

It was proved that the poly level complementary model of the financial support of the local innovative development is successfully functioning in the European Union, and the most part of funds comes from national and supranational sources. National sources are most often aimed at institutional financing of educational and research institutions, development of infrastructure for research and innovation, support for fundamental research, and technology commercialization processes or tax privileges. Supranational programs have clear priorities and criteria for competitive selection of projects with a fundamental requirement for their co-financing at the expense of public or private sources.

The distribution of horizontal (heterarkous) structures of management of the local innovation process, within which, along with local authorities, a significant role belongs to non-state regional professional associations, unions, and chambers of commerce, shows a tendency towards decentralization of innovative development management systems, which is especially reflected in the modern reform of the power the vertical of Great Britain in the context of forming a network of informal local business partnerships throughout the UK. So, the priorities of the development of the local economy are determined not even at the regional level, but at the local level, which is directly close to the respective communities and enterprises.

Table 1 contains averaged data of each of three factors of regional innovation activity, the combination of which clearly defines the nature and models of the innovation activities for seven groups of regions.

Table 1
THE STATISTICAL IDENTIFICATION OF THE NATURE OF THE INNOVATION DEVELOPMENT OF THE EU REGIONS

	Balanced innovation regions	Regions that absorb knowledge	Regions with prevailing of the public financing of knowledge	Absorbing knowledge innovation regions	Industrialized innovation regions	High-tech regions with innovation entrepreneurship	regions with innovation entrepreneurship
Factor 1: “ <i>Innovation entrepreneurship</i> ”	0.6426	-0.9213	-0.2449	1.4006	-0.5495	0.9803	1.0774
Factor 2: “ <i>Technological innovations</i> ”	0.2253	-0.4722	-0.5110	-1.6120	0.4632	2.3760	0.3478
Factor 3: “ <i>Public knowledge</i> ”	0.2348	-0.6122	2.088	-0.4414	-0.0611	0.1811	-1.3189
Number of regions	42	49	21	19	49	12	11

Note: The proximity of the values of factors to zero means that the estimate is close to the mean value for all regions. At the same time, the result below zero means that the average value of this group of regions is lower than the average value for the 203 studied regions.

The statistical identification of groups of regions according to their innovative capacity is as follows: Innovative leaders are regions whose integral index of innovation is more than 20% higher than the average value for EU-28; innovative followers are regions whose integral index of innovativeness is less than 20% higher than the average value, but no more than 10% inferior to it; for moderate innovators the integrated innovation index is 50% to 10% lower than the average value for the EU; for weak innovators the innovation indexes are more than 50% lower than the average value for EU-28.

The application of methodological tools of the paradigm of local innovation development enables you to assess the regional effects of modern globalization trends. The reasons for the permanent polarization of innovation dynamics of the regions both in the world dimension and within the integration groups can be explained by the increase in return on investment in intellectual capital and the synergetic effects on the local accumulation of innovation potential. The increase in incidence of destabilization of the international business environment causes the actualization of the role of social factors and institutions in balancing the development of the local economy (the theory of institutional density, social capital, and concept of non-commercial interdependencies) that can significantly reduce the level of economic risk and form resilience to external threats.

The diversification of forms of entrepreneurial cooperation, vertical disintegration of large business groups, along with expansion of outsourcing of production and technological processes and consolidation of the assets of specialized suppliers, are due to the need to ensure the complementarity of technological competencies as a key precondition for the formation of competitive advantages of modern cooperative business models.

The results of our study are confirmed by the following studies. The fundamental social economic process is globalization, which is understood as the objective process of strengthening the interconnection and interdependence of national economies, the basis of which is the development of world markets for goods, services, labor, capital (Aydalot, 2018). The form of modern globalization is the process of regionalization, which manifests itself in the formation of integration groups, whose purpose is to increase the efficiency of economic processes through minimization of transaction costs, creation of a homogenized economic environment, coordination of economic policies to obtain synergistic effects due to the free movement of goods, capital services and labour within the limits of certain integration groups (Hilorme et al., 2018).

CONCLUSIONS

As a result of the long evolution of systemic science and technology policy in the EU, it was possible to form a poly structural complementary model for support of innovation business, at the supranational level, the multiplicative effect of investment in R&D works is ensured by the synergy of the Horizon 2020 framework program with structural investment funds and sectoral community programs, which will continue to be allocated to the economies of the EU Member States, provided that they are co-financed from national sources and at the expense of resources of final beneficiaries. The financial mechanisms are complemented by a set of measures of organizational and economic nature, which include pan-European networks of consulting support, technology transfer, technological parks and business incubators, technological platforms, etc. The direct institutional and competitive project financial support for scientific and technological activities of state academic institutions, investment in the development in the infrastructure of the research activities and commercialization of new technologies, stimulation of cluster formation, and fiscal incentives for private companies are dominant at the EU level. The functions of the grassroots (local or municipal) institutional level of the EU innovation policy include solving the urgent problems of the development of local innovation and production systems through the facilitation of local clusterization processes, public-and-private innovation partnership, advisory support for small and medium enterprises, improvement of education and advanced training systems etc.

RECOMMENDATIONS

The stimulation of innovative entrepreneurship and self-employment has become a leading motive for the innovation policy of the most developed European states, especially in the period after the global financial crisis of 2008-2009. Based on the open innovation model, whose effectiveness is much higher for the development of local economies, we recommend to use the experience of the science park of Sofia-Antilopolis. The creation of startups and spinoffs in the information and communication cluster of the technology park has become the key driver of self-development in the region. At the same time, the existing biotech cluster showed the opposite (quite inert) dynamics in most economic indicators (trade turnover, exports, employment, expenditures for R&D work, number of enterprises in the cluster, and number of new start-ups and spinoffs, etc.).

The reason for this is the closed model of innovation co-operation, according to which the divisions of pharmaceutical TNCs are focused on cooperation with local academic institutions, but do not intend to interact with competitive structures.

REFERENCES

- Aydalot, P. (2018). Technological trajectories and regional innovation in Europe. In *High Technology Industry and Innovative Environments* (pp. 22-47). Routledge.
- Hilorme, T., Nazarenko, I., Okulicz-Kozaryn, W., Getman, O., & Drobyazko, S. (2018). Innovative model of economic behavior of agents in the sphere of energy conservation. *Academy of Entrepreneurship Journal*, 24(3).
- Morgan, K. (2017). Nurturing novelty: Regional innovation policy in the age of smart specialisation. *Environment and Planning C: Politics and Space*, 35(4), 569-583.
- Pike, A., Rodríguez-Pose, A., & Tomaney, J. (2017). Shifting horizons in local and regional development. *Regional Studies*, 51(1), 46-57.
- Tetiana, H., Chorna M., Karpenko L., Milyavskiy M., & Drobyazko S. (2018a). Innovative model of enterprises personnel incentives evaluation. *Academy of Strategic Management Journal* 17(3).
- Tetiana, H., Karpenko, L., Fedoruk, O., Shevchenko, I., & Drobyazko, S. (2018b). Innovative methods of performance evaluation of energy efficiency project. *Academy of Strategic Management Journal*, 17(2), 112-110.
- Tripp, M., Grillitsch, M., & Isaksen, A. (2018). Exogenous sources of regional industrial change: Attraction and absorption of non-local knowledge for new path development. *Progress in Human Geography*, 42(5), 687-705.