Creation of a National Innovation System: A Tough Task for Ukraine

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Abstract

The work contains issues related to the creation of a national innovation system in Ukraine. Since Ukraine belongs to the countries of post-communist camp, processes associated with creation of innovations are complex and have long-term character. Public administration and innovation policy are defined as effective tools for the development and dissemination of innovations. State innovation policy should take into account complexity of innovations, as well as large number of industries in which innovations can be applied. That is why it is necessary to use theory of interdisciplinarity in order to elaborate efforts and work of stakeholders. Particular attention is drawn to the possibility of incorporating Ukraine's national innovation system into global innovation network. On the other hand, attention is given to local players that operate in the innovations market: authorities, academic institutions, business representatives and civil society. Increase of public investment in education, science and innovation is determined as the main monetary factor in the development of national innovation system. At the same time, promotion of innovations, development of trust between stakeholders and creation of social capital are major non-monetary factors. Formation of the national innovation system in Ukraine is a long-term process and requires efforts coordination of all stakeholders.

Key words: developing countries, innovations, interdisciplinarity, national innovation system, Ukraine.
J.E.L. classification: O30, O38.

1. Introduction

At the moment, Ukraine belongs to developing countries, or rather to a group of post-communist countries. In nearly 30-year history of independent development, Ukraine has succeeded in carrying out a number of reforms, among which legislative and state reforms are the main ones. These reforms are the key to a balanced development of the economy. Despite the fact that legislation reform took place mainly during the 1990s, and public administration reform over the last 5 years, both of them are important for optimization of many spheres of the country's life, including innovations. Modernization of the ministries work, decentralization reform, and the application of e-governance are innovations by themselves. They are intended to become the basis for future changes in all spheres of the country's life.

In this context, the issue of innovations has central place. Innovations must be made in most sectors of the economy and society in order to bring about systemic changes in the public and economical life of the country. Creation of a national innovation system should be characterized not only by universality, but also by the attention to each individual case of innovations application. Yet, systemic, consistent, collaborative and cohesive work of stakeholders must become the pillars of effective change.

2. Literature review

The issue of innovations is one of the most important at the beginning of the XXI century. The discourse relating to innovations has numerous branches and variations. Ukraine should take into account development of innovations in neighboring countries and in Europe as a whole. The studies conducted in EU are large-scale and can include 20 countries, in the time interval between 1995 and 2013 (Szarowská, 2017). Another study concerned innovations measurement in 30 European countries, between 2005 and 2014 (Włodarczyk, 2017). These studies are large-scale and systemic, so they can be used to establish important patterns of a national innovation system development.

It is worth to pay attention to industrial modernization in Europe (Ivanová et al, 2017) and to the difference in innovation potential among European regions (Hunady et al, 2017). Thus, it is important to draw attention to the experience of European countries in order to choose the best way to develop the national innovation system, and to create it faster.

3. Research methodology

The purpose of this article is to make some clarifications on the problem of a national innovation system creation in Ukraine. Taking into account the above-mentioned reforms, it is important to focus on the benefits that soon may be created. The basis of the research methodology is combination of analysis method and theoretical modeling.

Two scientific approaches are used in this work, which allow to conceptualize and specify theoretical ideas that arose during the course of work. The system approach allows to take into account certain essential features of the national innovation system creation and development. The interdisciplinary approach can clearly demonstrate the interdependence between different parts of the national innovation system and present it as an organic whole.

4. Findings

Knowledge regarding creation of a national innovation system is quite complex and extensive. First of all, it is necessary to avoid confusion regarding the level of economic development, within which it is necessary to create an innovation system. Developed economies and developing economies are very different in the opportunities associated with innovations. Taking into account the case of Ukraine, the understanding that Ukraine is developing country plays a key role in underlying situation understanding and explanation of opportunities that can be created. Ukraine is a transitional post-communist country that has been developing a national market economy for almost 30 years. Although problems of Ukraine's progress towards capitalism are debatable, the creation of a national innovation system is still a pressing issue. This is important because an increase in innovation level will mean an increase in competitiveness of the national economy sectors. That is why understanding of the current problems in Ukraine and its economy is so important. Ukraine is a post-communist country that is developing and is heading towards creation of a market economy and a national capitalism.

Although developed European economies and countries of the post-communist camp are significantly different in terms of development, the factors determining development of both are very similar. Deindustrialization and innovation have a large number of links (Beg et al, 2017). In general, these thoughts concern convergence in social, political and economic life of the European region. This means that developing European countries have all chances to evolve faster than developed, as it is beneficial to all. This way increases the competitiveness of Europe as a global region (Zinovyeva et al, 2016). Because of the development and implementation of innovations, Eastern European countries can catch up with their neighbors. Belarus, Ukraine or Turkey can obtain useful knowledge not only from Germany or France but also from countries such as Poland, Hungary, Romania and Bulgaria. In the case of Ukraine, existence of the economic association with the EU can increase competitiveness of Ukrainian products at the expense of existing quality standards in the EU.

Innovations creation increases competitiveness, especially at the country level. Therefore, it should be known that one of the main factors for the dissemination of innovation is relevant governance policy of individual government ministries and local authorities. Researchers confirm that economic development can be accelerated in developing countries where policy makers and government officials create specific innovation policies and increase research funding (Dobrzanski, 2018). An innovation policy can be general or more specific: the use of new technologies, monetary leverage, tax simplification, and duty reduction are just a few examples of existing opportunities (Westmore, 2013). It must be taken into account that innovation and reform policies must be systemic and inclusive. As a fragmentary attitude to innovations in certain industries may cause lagging behind other sectors of an economy, so it is necessary to consider sectoral, territorial and resource principles. Territorial and municipal divisions of a country into regions are important because all citizens want to be successful and prosperous.

A remarkable example of the large-scale creation and application of innovations in Ukraine is the reforms of last 5 years. Important policies and innovations have been launched in the areas of public administration, municipal police, education, medicine, legislation, anti-corruption, religion, international relations, military affairs, social security, economics, finance, energy, transport and other industries. It must be understood that reforms in each of these spheres consist of a large number of small and large innovations, which together improve each individual domain. Innovations carried out constitute solid basis, which can serve the continuation and completion of reforms. However, in those areas where innovations will not continue, the result will not be achieved. At the moment, change of the country's leadership, mark a new stage in country's development. Therefore, it is important that new leadership of the country support the course of its predecessors, pay attention to the work done before, and do not reject it.

Ukraine, as a developing country, needs to introduce technological innovation, since it accelerates development and reduces economic inequality (Kharlamova et al, 2018). For example, the system of e-governance was introduced in Ukraine, which facilitates relations between city residents and city councils. Thus, computerization and didjitalization significantly affect the growth of citizens' confidence concerning the executive branch actions and form social capital.

Another type of technological innovation is the modernization of the old industrial regions (Hlaváček et al, 2017). Such an example is particularly valuable for Ukraine, since creation of innovations in traditional industries can transform economic potential of some cities and even entire regions within the country.

Problems of the society transformation, reforms initiation and innovations creation are not simple. However, reformers should pay attention to main points of common good and be consistent in improvements creation. Ukraine can benefit from the experience of developing countries, since the creation of innovative economy and innovative society is a long-term process.

If it is clear that Ukraine is a developing country, it should also be clear that innovation policy and technological change are crucial at current stage. Reforms at the national level, on the one hand, relate to participation in the global processes, and on the other hand, are connected to creation and application of innovations at the local level. Innovation policy should take into account the link between national economy and global economic networks, as well as willingness of local authorities to apply innovations.

The basis for Ukrainian innovation system creation should be the understanding that innovations are created by professionals with appropriate knowledge and skills. That is why, at the state level, problem of innovations has complex interdisciplinary character. Taking into account numerous branches of knowledge and industry, suitable governance requires understanding of economic, human, natural and technological knowledge. Such activities require productive interaction between different stakeholders: state, business, universities and civil society. That is why it is important to take into account the interdisciplinary approach as an effective tool for a national innovation system creation and improvement, especially for managers and politicians (Gashenko et al, 2016).

We believe that in addition to the understanding of interdisciplinarity theory, stakeholders should focus on three main factors, namely: global level, local level, and knowledge economy issues.

Today, global market of innovations exists as a place for international professional exchange. It is also possible to great effectiveness of global innovation networks (Dudukalov et al, 2016). Creation and development of the national innovation system in Ukraine will help to apply structural and strategic principles. Increasing the role of Ukraine as a player in global innovation processes will be the consequence of competitiveness improvement through the use of innovations. The role of the state, as a stakeholder, lies in lobbying the interests of Ukrainian innovation enterprises at the international level. The state can also protect the interests of domestic innovators, as well as create better conditions for their entry into the global market. Innovation as well as participation in global innovation networks can significantly increase employment in the country (Marcolin et al, 2018). In addition, formation of the national innovation system concept concerns the strengthening of the role of strategic development and systematic efforts of various stakeholders in the country. It is worth remembering that the inclusion of national system into global network, on the one hand, is inseparable from the development of innovations at the local level, on the other hand. Common sense suggests that the second rather than the first factor is the basis of a national innovation system.

Taking into account the fact that problems of a national innovation system creation are being discussed both by politicians and academics, additional extra efforts should be made to implement innovations (Sesay et al, 2018). Discussion on the creation of a national innovation system should be extended to regional and local levels. Local stakeholders should be guided by a complex set of innovations related issues as well as by "what they can do" as a part of the innovation system. At the local level, universities, small businesses, transport infrastructure, etc. are the components of national innovation system (Akhmetova, 2017). Promotion of innovation issues at the local level will allow local stakeholders to create a sense of belonging to progressive changes in society and state. Provision of useful information about innovations is an important tool for inclusion of local stakeholders to innovative activities. Particularly important in this regard is the promotion of knowledge economy, as well as the theoretical developments of scientists carried out over the past decades.

Creation of an effective innovation system is considered as a prerequisite for a knowledge economy creation (Bednář et al, 2018). In turn, the functioning of a knowledge economy depends on the innovative model of development (Smoliy et al, 2018). Creation of a knowledge economy within Ukraine will increase competitiveness of the country, and it will also improve general welfare of the population. It should be assumed that creation of a national innovation system is not an easy task. It requires coordination of stakeholders' efforts and hard work for decades. In general, the concept of a national innovation system creation requires a broad and lengthy discussion in Ukraine. It can be noted that all prerequisites for the national innovation system creation have already been implemented in Ukraine. Innovations discourse and knowledge economy are well known to Ukrainian academic community. That is why it is worth combining the efforts of all key stakeholders to obtain systemic and long-lasting effect.

Creation of a national innovation system can increase national innovation enterprises competitiveness (Geldres-Weiss et al, 2018). This can be achieved through increase of investment in innovations. There is a lot of literature that confirms the direct correlation between level of investment and innovativeness of an enterprise. The same can be applied on a state level. This is called "investment in innovative capital". Particularly valuable are the works related to investing in innovative capital under the conditions of limited resources (Trajkovski, 2018). Such conditions of innovations' creation are especially valuable for Ukraine. Since the expenditures on education, science and innovations are relatively low in Ukraine, the experience of innovations investment increase is particularly valuable.

The peculiarities of innovation development support include the problem of innovative hubs creation (Kraus, 2017). We must say that there are many varieties of hubs in Western Europe. They can be in a form of innovative studios, centers, clusters and associations. A systemic state policy in the innovation domain should focus on gathering information about such centers in Ukraine, in order to create open access to such data. A state should also support innovator's efforts in order to create strong players within the national innovation network. In this regard, it is important to create acceptable conditions for the development of innovation system and dissemination of innovations. On the initial stage, innovators may be afraid that their inventions will be stolen (Papula et al,

2018). Until an appropriate level of trust among stakeholders in the innovation market will be created, it will not be possible to create favorable conditions for the development of social capital. Social capital is an important component of the most networks in the 21st century. Therefore, it is important to focus on the availability of knowledge and patents, and also on access to information, as well as on sharing of available resources.

Increase of innovative projects financing at the country level, as well as increase of trust between stakeholders, at the local level, are the keys to effective development of a national innovation system. In this regard, Ukrainian scientists must pay attention to the concept of open innovations, so politicians and reformers could focus on the possibility of their practical application.

5. Conclusions

A national innovation system creation is a complex and long-term process. So far, Ukraine is not an active participant in global innovation networks. Similarly, trust between stakeholders at the local level is low. An effective market economy creation requires significant investment in innovative capital. In addition, there are numerous industries in Ukraine where a need for innovation is crucial. During a national innovation system creation, governors and other stakeholders should use the systemic approach, and also the interdisciplinary approach. The distribution of efforts regarding an innovation system creation should correlate with the uniformity of all key industries development, which can not be achieved without the use of interdisciplinarity.

This research investigate some theoretical questions of the national innovation system development in Ukraine. It is a part of national and global discourses in this area. Particular attention of Ukrainian scientists should be paid to the formation of innovative clusters in key industries of Ukraine, as parts of a national innovation system.

6. References

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