International Journal on Emerging Technologies **10**(2a): 141-144(2019)

ISSN No. (Print) : 0975-8364
ISSN No. (Online) : 2249-3255

Management of University Innovation Potential in the Modern Reality of Kazakhstan

Dilyara Shakirova[1], Elena Ivanova[2], Aliya Ye. Abaidilda[3] and Aigul B. Maidyrova[4]

[1]Department of Language and Intercultural Communication, Kazan Federal University, Russia.
[2]Specialist in educational and methodical work of the 1st category, Department of Philology and Intercultural Communication, Center for Support of Educational and Scientific Activities (main employee), Kazan Federal University, Russia.
[3]Department of Management, L.N. Gumilyov Eurasian National University, Nur-Sultan (Astana), Kazakhstan
[4]Department of Economics and entrepreneurship, L.N. Gumilyov Eurasian National University, Nur-Sultan (Astana), Kazakhstan, Russia.

(Corresponding author : Dilyara Shakirova)
(Received 05 May 2019, Revised 16 July 2019 Accepted 25 July 2019)
(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: According to the Program of innovative development of the Republic of Kazakhstan until 2020, the formation of national system of competences and increase in prestige of the Kazakhstan higher education in the international education market have to become the main criterion of competitiveness of education. The modern developments of economy happening in the world are subject to processes of rapid growth and change according to violently developing and not always precisely predictable tendencies, and therefore activity of all elements of economy including education systems, demands constant improvement of a management. In the western countries, the innovative universities take the leading place in development of national economy. International experience shows that the universities gain huge income from development and deployment of innovative products. In operating conditions of market economy, the development of innovative activity and strengthening of scientific and innovational potential of universities are especially relevant for our republic.

In this paper, we analyze the problems of development of innovative potential of higher educational institutions of the Republic of Kazakhstan and the ways of its solution. Our study is based on statistical analysis of innovation activities of universities and. Our results suggest that the presence of well-developed system of evaluation, the quality of management, investment and funding in research and higher education, research staff, necessary innovative infrastructure, collaboration with the private sector will contribute to the solution of many issues in the given area.

Keywords: Innovative potential, higher education institution, innovation, innovative development, university, management.

I. INTRODUCTION

In the context of global competition, the importance of universities with a high innovative potential is increasing for the development of scientific and innovation system of the country based on the knowledge-based economy. Many studies are dedicated to discover the essence and structure of innovative potential. At the same time, there is no unified scientific approach to the formation of the goals of innovative development of higher education institution and no single methodology for assessing the innovative potential. Each scientific institution or university establishes organizational and management goals only in accordance with "itself" and the place where it receives in the region. It is necessary to note the work of Zhylinska *et al.,* who gave a definition of innovative potential of research university and described in detail the structural elements of IP. Authors define "Innovative potential of a research university is a set of available and ready for use internal and external resources and opportunities of a world-class university that enable it to effectively carry out its mission" [1]. Other scientists point the innovative potential of a university as is an opportunity to transform the agreed components or resources (human, educational, intellectual, material and financial), capable of carrying out effective activities in an innovative environment. Innovative potential of a university, reflecting the resource and effective components of the activities of higher education institutions, is the basis of successful cooperation with enterprises of real and financial sectors of the economy, as well as effective participation in state and international grants [2].

Despite the numerous terminological discussions on the essence of the concept of "innovative potential", scientific literature lacks comprehensive research on the management of innovative potential of Kazakhstan universities and the issues of accounting and implementation of innovative potential in the field of innovative development of domestic universities are insufficiently studied. At present, there are still a number of issues related to the innovative activity of domestic universities that need to be addressed.

The purpose of the paper. This paper outlines the ways of increasing university's innovation capacity. The following tasks were set as the article's objectives: 1) to analyze the current problems in the field of universities innovation development in Kazakhstan; 2) to identify main development directions; 3) to structure the system of management of the university's innovation potential. Authors uses system functional and statistical analyses as a methodological basis of the study. The main the main provisions of this article can be used as

recommendations for the management of innovation process in higher education institutions.

II. METHODS

The theoretical and methodological base of the current article consists of the works of scientists-economists of Kazakhstan, CIS and foreign countries on the meaning of innovative potential of university and the ways to increase it. Statistical references of Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan and UNESCO, World Economic Forum are used as a data for the study. The following dominant research methods are used: system and statistical analyses, critical analysis and synthesis. The authors uses the journal databases such as SCOPUS and the Web of Science to search for scientific publications in this research.

III. RESULTS AND DISCUSSION

Global Competitiveness Index and Ranking prepared by World Economic to measure the Innovation Capability of a country the World Economic Forum surveyed 10 innovation components. Forum shows that in 2018 Kazakhstan ranked 87 on “Innovation Capability” out of 140 countries in the world (see Table 1). This means that the countries score is very low and is not even halfway the frontier (scoring 50 or less).

Expenditure on research and development (R & D covers basic research, applied research, and experimental development.) as a percentage of GDP in Kazakhstan is also extremely low and amounts only 0.2 %. In comparison, the countries with the highest indicator are shown in the Table 2. In our country, R & D spending by sectors is mainly divided into equal parts between the government, business, universities and private non-profit. While in other well-developed countries R & D, spending by business sector is more than 70%, which means that business is the main initiator of innovative breakthrough and novelty. According to the experience, strong spending by the business sector is an underlying factor for success.

These indicators demonstrate the necessity of efforts at encouraging R & D in the country. In order to succeed in a fast changing global economy, Kazakhstan should continue to drive innovation and channels technology resources into economic value for strengthening the country’s competitiveness [3].

The implementation of new approaches to the development of higher education in Kazakhstan, providing for the transformation from traditional universities to innovative type universities are built on the basis of the concept of the university as an educational, scientific and innovative complex. However, the development of innovations in the higher education system requires solving a number of issues.

The analysis of the current situation shows the existence of the main problems of development of universities innovative potential in Kazakhstan: *a) lack of commercial basis of scientific research and b) separation of scientific research from production.* There is no interaction between representatives of the research sphere and production enterprises; as a result, many applied developments are not implemented in real production [4].

Factors, which influence on slowing innovative development, can be divided into two categories: resource (human, intellectual, material, financial, infrastructure) and managerial, organizational (see Table 3).

Hence, the relatively low innovative value of universities in the process of innovative development of the state as a whole, which should now increase, including in order achieving the planned result of the Program of innovative development of the Republic of Kazakhstan until 2020.

Based on the results of the assessment and the identified problems, it is necessary to determine the main directions of increasing the innovative potential of the studied university and the effectiveness of its use. Once the conceptual directions have been defined, concrete measures should be developed to improve the innovative capacity and efficiency of its use. This stage involves the creation of specific algorithms to achieve the goals, and proposals should answer the question "what to do?" [5]. In this regard, we will propose and justify measures to improve the innovative potential of the regions and the efficiency of its use.

The following main directions should be taking into account in developing of university’s innovative potential:

1. *The presence of well-developed system of evaluation of innovative potential and innovative activity of a university.* Universities must have strategies for evaluating, managing and coordinating innovation initiatives [6]. The formation of the correct process management system depends on the correct assessment of the innovation potential. We have already mentioned that there is no single system of evaluation and each organization must choose the appropriate methodology.

2. Improving the quality of management. The university's ability to innovate and innovate is determined by the level of innovation management in universities. The decisive role for improving its quality and efficiency is played by information support, the basis of which, of course, is accounting information about the actual parameters of innovative development. It means that innovative management, acting as a correlator of the organization of university systems at all levels of management and serving as a basis for informed management decisions on the development of innovative potential [7].

3. *Increasing in levels of investment and funding in research and higher education.* This is one of the most vulnerable issues. The implementation of innovations first requires an increase in investment. The current situation in Kazakhstan economy is such that there is an acute shortage of financial resources necessary for development. At the same time, universities do not have their own funds and ideally, business/enterprises should be the main source of financing for innovation.

4. *Encouraging research staff.* Acquisition and retention of the creative specialists, researcher and scientists, highly skilled personnel capable to develop and implement new scientific developments, as well as managing them is very important in formation of innovative potential [1, 8]. A university administration should have a special programme to reward research that produces innovation and transfer of knowledge to society.

Table 1: Global Competitiveness Index and Ranking: Kazakhstan, 2013-2018.

Category	2013	2014	2015	2016	2017	2018
Innovation Capability, score	31	31	33	34	32	32
Innovation Capability, rank	95	90	86	79	87	87

Sources: World Economic Forum, 2018.

Table 2: R & D spending by countries and sectors.

Country	R & D spending as % of GDP	Number of researchers per million inhabitants	R&D spending by university sector, %	R &D spending by business sector, %
Kazakhstan	0, 2	790	22	36, 68
Russian Federation	1, 1	3294	9,8	59, 60
USA	2	4217	13	71, 51
China	2	1096	7	77, 29
Japan	3, 4	5328	12	77, 75
Korea Republic	4, 3	6856	9	78, 22

Sources: UNESCO, 2018

Table 3: Factors slowing development of innovative potential universities.

Resources	Managerial and organizational
Lack of government financing of R & D;	Inefficient management of educational institutions in market conditions;
Material and technical resources of universities are not updated at an sufficient pace;	There is no mechanism of interaction of design institutes, design bureaus and production with universities;
Outdated material and technical base and equipment of laboratories do not allow to conduct high-quality scientific research;	Insufficient funding of university science;
There are no enough conditions for attracting young people to science.	Excessive administration of the educational process, which does not allow to respond flexibly to the achievements of science and technology, to take into account the changed needs of production;
Interdepartmental barriers between the universities and research institutions;	Weak link between education, science, and production;
Insufficient number of construction institutes and bureaus slows down technology transfer to production;	Lack of economic incentives for the private sector to invest in education, science and innovation;
Insufficient support of administrative and financial opportunities to attract third-party scientific and pedagogical workers, including from abroad.	Institutional forms of support of the innovative structures, which are carrying out developments and providing bringing of results of research and developmental works to their practical implementation, are not developed.

5. *Improving and profile the necessary innovative infrastructure*. Innovation infrastructure is a complex of interrelated structures that ensure the implementation of innovative activities of a university. It includes material and technical support, the system of management and control for innovative activities, laboratories, research centers, centers of technology transfers, technological parks, departments for consulting, intellectual property protection services, promotion of intellectual products. Creation of business incubators and centers of start-up projects for students at universities, which also can help to foster entrepreneurship.

6. *Encouraging collaboration with the private sector.* In today's competitive market, universities must set new partnerships with leading companies, MNCs, and other research-intensive institutions. As President of Carnegie Mellon University, Farnam Jahanian mentions "these partnerships are not just about transferring knowledge from lab to practice. They provide critical funding for talented faculty and students to pursue foundational research, enable students and faculty to exchange ideas with the very best minds inside and outside the academy, and perhaps most importantly, help to prepare students to be citizens of a rapidly changing world" [9].

IV. CONCLUSIONS

To increase the efficiency of the economy at the present stage, qualitative changes in the system of management of the internal potential of higher education institutions are necessary.

Since the innovative potential is the basis for the implementation of innovative activities of a university, its evaluation is of particular importance. One concern about the findings was that there are no open data on national science and innovation related statistics and difficulties with evaluating the innovation potential. This assumption might be addressed in future studies.

For effective management of innovative potential it is necessary to perform quickly taking into account new world challenges. Well-developed system of evaluation, the quality of management, enough investment and funding in research and higher education, high skilled research staff, improves innovative infrastructure, close collaboration with the private sector will contribute to force of innovative potential of a university and achieve good results in becoming world-class high education institution.

ACKNOWLEDGEMENTS

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

REFERENCES

[1]. O. Zhylinska, M. Sitnicki, A. Vikulova. (2019). Systematic assessment of the innovative potential of a research university. *Baltic Journal of Economics,* Vol. *5*, No. 2, pp. 38-44.

[2]. D.A. Shevchenko, D.A. Kaplan. (2012). Innovation potential of the HEI. [The innovative potential of the university 4]. *RSUH. Series Management*, Vol. *10*, pp. 186-20.

[3]. A. Abaidilda. (2019). Developing innovative potential of university: organizational aspects and development trends. *Turan University Scientific Magazine*. In press.
[4]. A. An, (2015). Innovative activity of universities as a basis for the formation of knowledge-based economy. [Innovative activity of universities as basis of a knowledge-based economy formation]. *Thesis for the degree of doctor of Philosophy,* pp. 45-49.
[5]. E.B. Dorina, E. Kadovba. (2019). Innovative potential of a region and the efficiency of its use. [The innovative potential of the region and the effectiveness of its]. *Economic bulletin of the university. Collection of scientific works of scientists and postgraduates*, Vol. *41*, pp. 47-57, 2019.
[6]. M. Jakovljevic. (2018). A model for innovation in higher education. *South African Journal of Higher Education*, Vol. *32*(4), pp. 109-131.
[7]. E.M. Egorova. (2016). Management of innovative activities of the university: accounting and information support. [University innovation management accounting and information support]. *Scientific and Methodical Electronic Journal "Concept",* Vol. *15*, pp. 741-745.
[8]. M. Yu. Platonov. (2013). The main elements of the management system of innovation process at the university. *Management of innovation process in higher education: monograph,* pp. 240, 74-94.
[9]. F. Jahanian. (2018). 4 ways universities are driving innovation. *World Economic Forum Annual Meeting*, https://www.weforum.org/agenda/2018/01/4-ways-universities-are-driving-innovation. (Accessed 25.05.2019).
[10]. M. Kearney. (2009). Higher Education, Research and Innovation: Charting the Course of the Changing Dynamics of the Knowledge Society. *Higher Education, Research and Innovation: Changing Dynamics,* pp.19-25.