IRSTI 06.01.05

L.K.Sanalieva[1], B.K. Issayeva[2], G.T.Akhmetova[3]
[1]S.Toraigyrov Pavlodar State University, Pavlodar, Kazakhstan
[2]L.N. Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan
[3]H. Dosmukhamedov Atyrau State University, Atyrau, Kazakhstan
(E-mail: laura_enu@mail.ru, b.isayeva_78@mail.ru, gulia1968@mail.ru)

Intellectual potential as a factor of the state economy development

Abstract. *Purpose* – The development of the leading countries of the world has led to the formation of a new economy – the economy of knowledge, innovation, global information systems, the economy of intellectual labor, science, and new technologies. Today, when Kazakhstan enters a new stage of its development, a complex research in various areas of social development is particularly relevant.

Methodology – The methodological basis of the study is based on a variety of modern analytical, economic and statistical analysis methods, a systematic approach, methods of analogy, comparative and expert assessments, statistical data processing.

Originality – One of such topical issues concerning every citizen of Kazakhstan is the problem of formation and development of intellectual nation - the support of our state, the basis for further development and prosperity of our country. This problem is multifaceted, it covers many areas, such as the formation of an intellectual society in Kazakhstan, the multiplication of the national intellectual potential in the formation of a rich intellectual nation, the formation of an intellectual citizen of the country.

Findings – Different fundamentals have been researched in this article and based on them the ways of solving were described. It is given intellectual potential determination in the interpretation of various authors. In this article, the main trends were analyzed in the development of the world intellectual potential were analyzed. The analysis of the level of intellectual property development to date, as well as the development prospects of certain qualitative factors.

Keywords: intellectual potential, modernization, globalization, competitiveness of the country.

DOI: https://doi.org/10.32523/2079-620X-2020-1-89-98

Introduction

In recent decades, the subject of research in the field of foreign and domestic economies are various types of capital associated with the human being in the production of goods and services. You can see an increase in the volume of research representing one or another capital of the subject, which leads to an increase in the role of capital.

In the developed countries of the world, the formation of an economy that is different from the previous economy of information networks is taking place with great speed. Knowledge (both quantitative and qualitative characteristics) can change the economy, technology, people and the social sphere. It cannot be quantified. Thus, there is an indirect indication called “high-tech”, that is, the contribution of new knowledge to new technologies, equipment, new forms of organization of production, etc. In this case, economic development and the development of society are the only process. It is difficult to separate the analysis of the economy from the analysis of society, since the economy is largely characterized by institutional indicators. Knowledge is measured by the market value of the decision they receive (technological, social, organizational, managerial). The capitalized value of a company can be tens of times higher than the balanced cost of intellectual labor in its assets, since the market estimates capital invested in education than capital in material form. In the context of the formation of a knowledge economy, world experience puts at the forefront a system of human interconnection not only with technics and technology (as in production after industrialization), but along with this, the relationship of man with man, with information resources, nature as the main source of creativity. This relationship is based on the

principles of linear structure and is carried out in the form of cooperation and partnership. The combination of these relations, in accordance with the rules, starts from the bottom (not from the top), in most cases the fact of mutual reliability of the parties is evaluated by the norms and values of an informal order, which play an important role. Thus, the economy of education brings a new socio-economic regime to the society.

Qualitative changes have occurred in the world over the past half century. The era of science, knowledge-based production and information has come. The emergence of the most modern society is impossible without the development of scientific research, the introduction and improvement of new technologies. All this increases the requirements for qualified personnel. The level of scientific research and the speed of implementation of the results largely determine the potential of the state.

The economic, financial, military, political power of developed countries depends on the state of applied and fundamental science, the development of research and development robots, the share of research products in the total volume of industrial production and gross national product.

An important factor for ensuring the country's competitiveness in the modern world economy is to increase an effective education system, the intellectual potential of the workforce through training.

Preservation and development of intellectual potential is the main direction of development of any developed country. It is considered as an important factor in socio-economic development, solving global problems associated with the progressive development of society. In many countries, the issues of growth of intellectual potential are assigned to priority areas of state policy, including in our country.

President N.Nazarbayev at his lecture "innovative industry of science and education is a strategic resource of Kazakhstan in the 21st century" noted the need to strengthen the intellectual potential of the nation [1].

Today, Kazakhstan has entered the phase of modernization of the economy. This period is characterized by the adaptation of science, education to modern economic conditions, leading to radical changes in the structural, organizational, personnel, infrastructure and financial support for the development of science and education. The development of scientific and technological potential should not be regarded as an uncharacteristic factor for traditional sectors of the economy. The field of science is a sector of the economy that has all the features, rules and mechanisms of general regulation for other sectors.

The Head of State noted in his speech "The Third Revival of Kazakhstan: Global Competitiveness" that the Fourth Industrial Revolution presents new challenges to the public. The third modernization will create a new model of economic growth, which will ensure global competitiveness of the country [1].

The third modernization has 5 main priorities for achieving desired economic growth rates aimed at achieving the long-term goals set forth in the Kazakhstan-2050 Strategy. Particular attention is paid to the first and fourth priorities aimed at the rapid technological modernization of the economy and improving the quality of human capital. In his speech, the President of Kazakhstan emphasized the need for active implementation of IT-knowledge in the educational process, financial literacy, as well as the principle of trilingualism. Increasing requirements for the quality of higher education and professional standards sets new main goals for educational institutions. Higher educational institutions need to solve the problems of preparing new educational programs in the new economic conditions, training competitive future specialists who are constantly in demand in the labor market. Curricula should be reviewed taking into account the need to develop skills that quickly adapt to changes in life situations, progressive innovations and the need for a personal search for information ("Kazakhstan-2050" strategy).

80% of Kazakhstan's economy is in the private sector, the principles of science-based market regulation are outdated and imperfect.

An ineffective mechanism for attracting the private sector to the development of scientific and technological potential, the relatively low activity of participants in the field of comparative research and the experimental computing field have demonstrated that this problem is relevant in the modern economy.

Literature review

Such scientists as Altynbaev R.Z., Elyutin V.P., Kochetov A.I., Smirnov A.G., Trapeznikov S.P., Shiryaev L.A. made a contribution to the development of formation features, characteristics of the essence of intellectual potential.

Materials and methods

Nusratullin V. assumes that intellectually significant productive force cannot be represented as a source of development, movement, that shapes the achievements of scientific and technological progress in the economy [2].

According to Ivantsov V.A., the intellectual potential (of a region, country or society) is an exceptional combination of social production resources combining material, natural, labor, financial and information resources that characterize the real state of an object, with which you can accurately determine promising goals [3].

A.F. Martynov explained that the intellectual potential of a region (country) is the broadest in society, able to transmit and understand the world of science, culture, information systems, production systems, transfer knowledge, as well as worldwide conquest with an appropriate set of manpower [4] .

According to Trapeznikov S.P., the concept of «intellectual potential» is associated with knowledge, and its formation is associated with an increase in the education of the population [5].

Reviews of intellectual potential are found in the works of V.P. Elyutin [6].

Intellectual potential-motivation - the relationship of resources and reserves, the potential and processes of the subject with the field of needs and general abilities of a person, the power of motor thinking and the provision of creative human performance in the activity process.

Intellectual potential is a systemic phenomenon that has multidimensional and multilevel determinants. The intellectual potential of a person can be investigated on the basis of an analysis of interactions: intelligence - the processes of life; intellect is a person. This is the subject of activity and personal growth, accumulated and formed in the process of human development.

Intellectual potential is a quality fund of services and new elements necessary for an intellectual transition to a new level of formation, reflecting reality.

Thus, the intellectual potential of society, in turn, depends on the level of health (physical and mental).

As a result of a decrease in the intellectual potential of society, the effectiveness of intellectual activity is reduced and leads to deep crisis situations in the economy. The area of critical importance is characterized by a decrease in the standard of living, public health, the intellectual potential of society and the effectiveness of intellectual activity, leading to the emergence of irreversible processes in society and the economy.

The activity of participants in the field of research and development continues to be weak throughout the scientific and technical system of Kazakhstan with the main factors for the introduction and development of new technologies and scientific and technical products, which are factors in maintaining and achieving competitive advantages in the domestic and foreign markets.

Problems of intellectual potential have a deep philosophical thought, or are associated with the general continuous relevance of potential. In case of non-use of the potential, it quickly disappears, on the contrary, if there is an active demand for science, the scientific potential is developing rapidly, the efficiency of its use becomes even faster. Currently, the lack of need for

science is increasing, in most cases this leads to an irreparable loss of intellectual potential of Kazakhstan. The ability to use intellectual potential to ensure the competitiveness of business entities as a manifestation of the general qualities of resources characterizes the potential possibility of the participation of intellectual potential in the production and development of competitive products, ensuring the efficiency of industrial and economic activities, and a favorable image of business structures.

In the modern world, competitiveness is determined not by traditional factors, such as price or quality, but by new factors in the elements of intellectual potential. Intellectual work, special knowledge and communications are not only added value, but also factors of competitiveness and economic development of business structures. Modern production is most often the promotion of minds, i.e. personnel, as well as the benefits of non-material impact from professionals, marketing specialists, engineers, accountants. Most of the impacts received from many organizations are the result of special knowledge, training and interaction of staff with partners and counterparty.

Results and discussions

Over the past five years, the volume of external costs for research equipment has increased from 61.7 billion tenge up to 69.3 billion tenge. The largest volume was registered in 2015 - 69.3 billion tenge, in 2016 - 66.6 billion tenge, and in 2017 - 68.9 billion tenge (it is important to take into account changes in the national currency). In 2017, the cost of research and development increased by 3.4% compared to previous years. The share of applied research costs in the total volume was 59.4%, the share of experimental developments was 24.9%, and basic research was 15.7% [7].

The largest part of external costs for research and development of conductive structures is accounted for by the republican budget - 51.3%. Own funds of the company - 40.9%, other sources - 7.8%. This is shown in table 1 below.

Table 1

External costs of research and development in the field of science in 2014-2017

	2014	2015	2016	2017
External costs, total	236.3	224.4	180.2	185.2
Of which:				
Natural science	47.1	20.4	2.6	X
Technical	43.7	-	-	-
Medical	3.2	-	-	-
Agriculture	137.7	147.8	129.0	146.0
Social	3.0	-	-	-
Academic	1.6	1.9	2.8	X
Engineering developments and technologies	-	54.3	45.7	22.2
Note: source Statistics Committee of the Ministry of Economy of the Republic of Kazakhstan [7]				

The priority areas for financing research and development in 2017 are research in the field of engineering development and technology, the share of external costs in the total amount of external costs for research and development amounted to 45.6%. Expenditures on research in the field of natural sciences amounted to 32.6%, in the field of agriculture - 9.5%, humanitarian - 5.1%, medical - 4.8%, social - 2.4%.

In the field of research and development in 2017, 22081 people were covered, including research specialists - 17 205 people. Of these, 1822 doctors of sciences, 380 doctors of sciences, 597 PhDs, 4562 candidates of sciences, 4109 masters [7].

According to UNESCO's latest ranking, in 2015, out of 74 countries around the world, Israel spent 4.27% of its high share in GDP (Gross Domestic Product) on research and development, and in recent years it has been the leader in this indicator. Then South Korea - 4.23%, Japan - 3.28%, Sweden - 3.26% and Austria - 3.07%, we can show this in Figure 1 below.

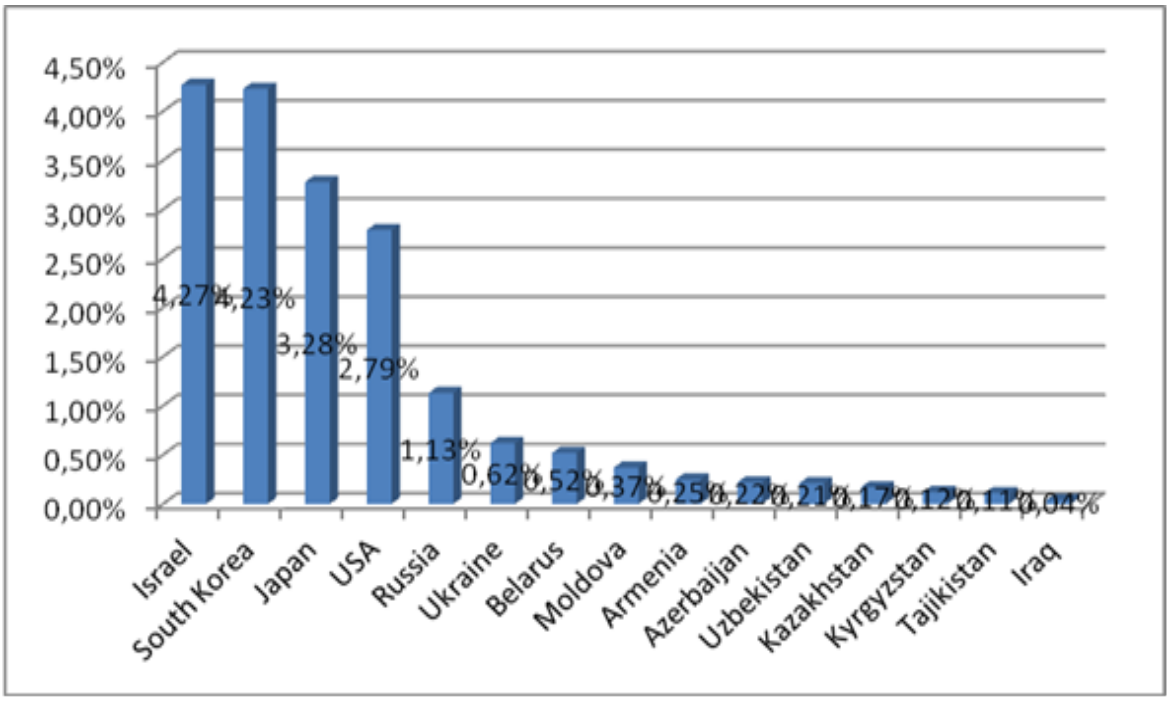

Figure 1. GDP for research and development

Note: source is UNESCO science report 2015

Kazakhstan ranks 63rd at the bottom of the list with 0.17%. Above us, GDP is Uzbekistan with 0.21%, lower is Kyrgyzstan-0.12%. (According to the Forbes Kazakhstan report, the indicator of Kazakhstan in 2017 was 0.14%) [8].

According to the calculations of international experts, for the sustainable development of the state it is necessary to allocate from 2 to 4% of GDP for financing science. The minimum value of research and development costs in relation to GDP is considered equal to 2% as one of the indicators of the country's economic security.

Analyzing the value of GDP per capita of countries such as Israel, South Korea and Japan, Sweden, Austria, we conclude that in modern conditions, even in the absence of natural resources in the country, success in economic development can be achieved.

Countries have achieved positive results through the efficient use of the intellectual resources of society. Thus, countries can increase their economic potential due to the correct strategic orientation of the economy. There are 4 main models of economic development: agrarian-oriented economy, raw material, technological and innovative economy.

In conditions of agrarian orientation, the country mainly produces agricultural products, exports and buys abroad the necessary industrial goods for received cash. This type of economy is characteristic of many underdeveloped countries. The level of use of the intellectual resources of society is low [9].

The export of raw materials in the economy is characteristic of countries with huge reserves of natural resources, which provide the bulk of the gross domestic product. The standard of living in such countries is usually higher than in agricultural economic countries, but there is a significant difference in the level of use and development of intellectual potential. In these countries, the focus is on the development of the mineral industry, causing damage to other socio-economic spheres of life [10].

Due to the insufficient development of applied science in countries with a technologically oriented economy, the production of technologies on an economically significant scale is not ensured; intellectual potential is used more effectively here. This happens with the import of modern technologies and the creation of high-quality products on its basis, which will subsequently be delivered to foreign and domestic markets. The development of a technology-oriented economy requires a highly skilled workforce, providing a developed education system. Therefore, simple literacy of the population is insufficient [11].

It is necessary to develop the Higher School, especially technical universities and colleges that meet the needs of the economy in the technological sector. A new history allows us to see the development of the educational system in countries with fast-growing economies, such as Japan, Taiwan, Singapore, Malaysia, South Korea, which have adopted a focus on the technological form of economic development. For example, in the Republic of Singapore, 13 universities account for 4.5 million inhabitants [12]. Three of them represent their own national universities of the country, and 10 are branches of the largest universities of developed countries of the world, created at the request of the Singapore government [13].

An innovative economy implies not only the use of modern high technology, but also their creation on the basis of the latest achievements of fundamental science. This type of economy in public policy has developed in countries where the development of science and education is a priority and has the necessary support from society. This type of economy is characteristic of Germany, the USA and Great Britain [14]. Unfortunately, at present, Kazakhstan cannot be attributed to an innovative model of the economy. Because this potential is not used in the right way. Therefore, the economy of our country in recent years has a raw material benchmark.

Conclusion

Thus, science in the country was removed from the process of economic reform. It was unable to ensure that Kazakhstan followed the developed countries and the creation of science necessity to activate the factors of economic and social progress. An important indicator of an innovative economy is the proportion of scientists and specialists conducting scientific research. Kazakhstan has significant scientific and technical potential and is mainly focused on the relationship of scientific and technological achievements.

An analysis of the problems reveals the main factors holding back the development of intellectual potential in Kazakhstan.

The organizational structure of the field of science lacks decision-making systems, the use of resources and the private sector potential. The presence of most of the administrative research programs carried out at the expense of the state budget makes it difficult to implement the legislatively established norm of uniform administration and coordination of research in the country.

The intellectual property existing in the country should open up and develop. An important place in the development of the intellectual potential of a nation is given to higher education. For the formation of the intellectual potential of the Republic of Kazakhstan, it is necessary to purposefully develop the innovative activities of the university: ensuring the connection of the education sector with the economic environment, the orientation of the institution of higher education on the educational services market and a promising labor market, the search for extra-budgetary methods of investing in educational services. The living conditions of the population

and the growth of its culture depend on the interconnected dynamic development of science, education and business.

Thus, the main problem in Kazakhstan is the lack of intellectual potential management systems related to its development and operation. It is necessary to move into a new information and intellectual production and capitalize the results of scientific work of scientists. In this case, it is possible to form a knowledge economy and ensure the country's competitiveness in the global environment.

In order for Kazakhstan to take a high place in the global ranking of human potential, it is necessary to pay attention to the causes of death, the state of factors of intellectual culture. As you know, the problems of delay in intellectual development in the country are caused by the lack of funds for the implementation of innovative projects in life. Most of the Kazakhstani specialists will go abroad, as they will have decent conditions for carrying out their activities and receive high wages.

These issues must be dealt with at the state level. In general, it is necessary to change the attitude towards science: scientists must receive high salaries, and research and development institutions should provide financial and investment support to bring research projects to a competitive level. Our country has a potential, even a very high potential. The developments of many domestic scientists are the best in the world, unfortunately, there are no fully opportunities for their further financing and use in life.

At this level, it is necessary to create a certain structure that would monitor the implementation of various necessary projects, in the future, the effective and intensive pace of innovation in Kazakhstan

The use of intellectual (human) potential is a continuous increase in the personal qualities of people which have been forming since childhood, in school and in the family and continuing throughout his life. The more a person's spiritual world is developed, the deeper his intellectual (human) potential and becomes of great importance as a factor in the country's economic growth. All these issues are of great scientific interest today, and more and more questions arise about this. The development of problems of intellectual (human) potential in the context of globalization is equal to all its components, which have not only scientific, but also practical significance.

One of the important factors influencing the improvement of the living conditions and work of citizens of the country is the quality of the mechanism for managing the economy at the macro level, which affects the formation of the living environment of the population. The main indicators characterizing the level of improvement of this mechanism are: the volume and structure of investments in the socio-cultural sphere (education, science, culture, healthcare), which determine the quality and power of human capital, the quality and standard of living of the country's population; the validity of the choice of socio-economic and scientific-technical development priorities; level of innovative activity of the enterprise (organization); consistency and quality of management decisions in the field of budget, tax, tariff, monetary, foreign exchange and customs policies.

The creation and implementation of an effective state socio-economic policy aimed at increasing the intellectual potential of society will ensure the achievement of the following main results: obtaining new knowledge about the laws of development of the scientific and technical potential of nature, man, society and the country, strengthening ties between science and education, creating a base for the selection and implementation of large-scale promising technological and innovative projects, training the human resources of an innovative economy; diversification of the economy in the direction of increasing the contribution of science and innovation to GDP growth based on the growth of production, sale of innovative products, technological re-equipment of leading enterprises, expansion of production of products with a high share of added value.

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Л.К. Саналиева[1], Б.К.Исаева[2], Г.Т.Ахметова[3]
[1]С.Торайғыров атындағы Павлодар мемлекеттік университеті, Павлодар, Қазақстан
[2]Л.Н.Гумилев атындағы Еуразия ұлттық университеті, Нұр-Сұлтан, Қазақстан
[3]Х.Досмұхамедов атындағы Атырау мемлекеттік университеті, Атырау, Қазақстан

Зияткерлік әлеует ел экономикасының даму факторы ретінде

Аңдатпа. Білім, ғылым, инновация, зияткерлік еңбек, жаһандық ақпараттық жүйе, жаңа технологиялар - елдің экономикасының дамуын қалыптастырған. Бүгінде Қазақстан жаңа кезеңге көшіп ел экономикасын, әртүрлі бағыттар бойынша кешенді зерттеу мәселесі өзекті болып табылады.

Еліміздің гүлденуі мен дамуы бүгінгі таңда жан-жақты болып тұр. Сол себепті зияткерлік әлеуетті көтеру, зияткерлік қоғамды құру, бай зияткерлік ұлтты қалыптастыруда халықтық зияткерлік әлеуетті көбейту, еліміздің ұлт жаңды азаматтарын тәрбиелеу сиякты көптеген іс-әрекеттер

жасалуда. Авторлар өз мақаласында әртүрлі ғалымдардың еңбектерін зерттеп, зияткерлік әлеует анықтамасын, сонымен қатар, басқа елдердің даму, талдау көрсеткіштері негізінде, және оны шешу жолдары мен әдістерін көрсеткен.

Л.К. Саналиева[1], Б.К.Исаева[2], Г.Т.Ахметова[3]

[1]Павлодарский государственный университет имени С.Торайгырова, Павлодар, Казахстан

[2]Евразийский национальный университет имени Л.Н.Гумилева, Нур-Султан, Казахстан

[3]Атырауский государственный университет имени Х.Досмухамедова, Атырау, Казахстан

Интеллектуальный потенциал как фактор экономического развития страны

Аннотация. Наука, образование, интеллектуальный труд, глобализация новых информационных систем, новые технологии, инновация, экономика интеллектуального труда – все это факторы развития ведущих стран мира.

Авторами в статье проанализированы факторы развития различных стран и существующие в них проблемы. Также были проанализированы доминирующие тенденции развития мирового интеллектуального потенциала в Казахстане в условиях глобализации. Проведено исследование относительно уровня формирования интеллектуальной собственности на сегодняшний день, а также перспективы, которые существуют в данной области при воздействии определенных качественных факторов.

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Information about authors:

Sanalieva L.K.- PhD student, S.Toraighyrov Pavlodar State University, Pavlodar, Kazakhstan.

Issayeva B. K. - PhD, Associate Professor of "Economics and entrepreneurship" Department, L.N.Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan.

Akhmetova G.T. - Candidate of Economic Sciences, H.Dosmukhamedov Atyrau State University, Atyrau, Kazakhstan.

Саналиева Л.К. - С.Торайғыров атындағы Павлодар мемлекеттік университетінің 3 курс докторанты, Павлодар, Қазақстан.

Исаева Б.К. - PhD, Л.Н.Гумилев атындағы Еуразия ұлттық университеті «Экономика және кәсіпкерлік» кафедрасының доценті м.а., Нұр-Сұлтан, Қазақстан.

Ахметова Г.Т. - экономика ғылымдарының кандидаты, Х. Досмұхамедов атындағы Атырау мемлекеттік университеті, Атырау, Қазақстан.