



THE CURRENT STATE OF TRENDS IN THE DEVELOPMENT OF INNOVATION AND INVESTMENT ACTIVITIES IN UZBEKISTAN

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Abstract

This article is devoted to the analysis of the implementation and financing of innovative activities during the period of new reforms ongoing in Uzbekistan. Besides, this article presents the conclusions of the research concerning the emergence of innovations and peculiarities of their investment focus, as well as formulated scientific approaches thereto. Moreover, the article analyzes financing research trends in the emergence of innovations in our country and presents developed scientific conclusions and proposals.

Keywords: Innovation, investment, research, innovation financing, economic growth

INTRODUCTION

On January 24, 2020, the President of the Republic of Uzbekistan in his Message to the chamber of the Oliy Majlis analyzed the reforms implemented in 2019 and noted the following (Mirziyoyev, 2020): "Since we strive to make Uzbekistan a developed country, we can only achieve this through intensive reforms, education and innovation". This statement testifies the necessity for further development of innovative activities in Uzbekistan. The fact that innovation is crucially important for the economy and particularly for the country is reflected at all development stages. The basic aspects of innovation activity are the following:

- enhances the country's competitiveness;
- serves to raise the volume of export-oriented products;
- conditions are created to reduce consumer and production costs in the country.



Currently, the priority of countries in the global markets is given to the high level of science-intensive products. For example, the share of the South Korean corporation Samsung in the world market is very big. This corporation owns 21 per cent of South Korean exports (62 billion USD) (www.koreaherald.com). 21 per cent may seem like a small number. However, the amount of 62 billion USD is several times or significantly higher than the annual GDP of many countries.

Under conditions of the current global environment, the South Korean corporation is struggling to maintain its market position. This can be justified by the fact that the major competitors of the company in the USA and China are constantly engaged in this same activity as well. Overall, Samsung has spent 8.4 billion USD on innovation in the first half of 2019. This number has increased by 12.2 per cent over the same period last year. Herewith 40 per cent of the corporation's patents have been obtained in the United States. According to the International Property Rights Association, Samsung ranked second in 2018 after IBM in terms of patents (www.sammobile.com).

It is commonly known, Samsung has become famous for its highly competitive products in the global market of mobile devices and information technologies. The main reason for the competitiveness factor formation was the comprehensive implementation of innovative activities at the company. Currently, there are 14 Samsung research centres throughout the world, which are located in various countries of Western Europe, South Asia and America. Besides, it should be noted, that in recent years the company has created artificial intelligence centres and due to them it has entered a new stage of the research development.

In our opinion, the establishment of these research centres creates conditions for the production of science-intensive products. In this regard, it is considered significant to prepare a solid foundation for innovations.

LITERATURE REVIEW

The complexity of modern economic development is directly related to the changing nature of the global market environment. Even though national interests are ensured in the cooperation of national economies in the processes of mutual integration, comprehensive provision of economic benefits is becoming increasingly complicated. In particular, even though when exporting natural resources or other raw materials or consumables from one country to another, mutual trade relations comply with the norms of international law and the exporting state completely loses its economic interest. For example, a country that extracts and directly exports oil is deprived of manufacturing the production of several products (that is, additional value) that can be created from this raw material. As a result, the economic interest in the country

decreases sharply. Therefore, the dependence of these countries on imports of high technologies is increasing. Thus, this trend has a significant impact on trade balance destabilization. Meanwhile, the leading-string mentality of the national economy rises, and the creative desire of people decreases.

If to emphasize the economy of the United Arab Emirates, which according to the World Bank (www.worldbank.org) is the country most closely associated with the export of natural resources, GDP growth in 2016 constituted 3 per cent, and in 2017 – 0,8 It should be noted that the oil production volume decreased by 3,5 per cent. The decrease in the volume of private consumption and investment activity was indemnified by an increase in public consumption (budgetary funds are required). After years it is intended to bring economic growth to 2 per cent due to increasing oil production. Also, in 2020 according to agreements with OPEC, economic growth will reach 3,2 per cent.

In case of considering the export structure of this country, it is oil and precious metals. However, finished consumer goods are essential in terms of imports composition. For example, if 1/3 of imports are from Japan, and textiles are imported from China (internationalwealth.info).

In our opinion, additional value creation in the country creates conditions for an additional inflow of foreign exchange into the national economy. This is reflected in the science-intensive products that emerge as a result of innovation. In this regard, countries with economies dependent from natural resources should attach strategic importance to the emergence of innovation and financing of these activities, as well as to attract investment in the industry.

As the President of Uzbekistan B. Mirziyoyev (2020) has noted, “It is advisable to have a network of research institutes, design bureaus, experimental production and innovation centres in each area of production. In our country, we need to widely attract investment not only in the economic sector but also in the field of scientific developments “know-how”, which also reflects strategic goals”.

According to the research, over half of the growth in the global economy derives from the discovery, emergence and commercialization of new products. In this regard, the rapid introduction of innovations in many types of innovative activities in advanced companies is reflected in the image of countries. For example, this situation is obvious with Japanese automakers (Toyota), Microsoft and Apple in the USA, Samsung in South Korea, etc. Investments volume in innovation in the core strategies of these companies remains very high. In particular, Apple has invested the amount of 4.2 billion USD in innovation (research and development) during the first half of 2019, and by the end of 2019, this figure has reached 16

billion USD (appleinsider.ru). This figure exceeds the expenditures of the state budget of our country by 3,5-4 billion USD.

From our point of view, as evidenced by international experience, high growth rates can be achieved as a result of the rapid attraction of investments in innovation. Therefore, when creating innovations, it is crucially important to develop mechanisms for the efficient positioning of funds not only from the budget but also from private business.

The issues of innovation and attracting investments have been studied by many domestic and foreign scholars who have developed relevant scientific conclusions. The “Explanatory Dictionary of the Uzbek Language” of the National Encyclopedia, published under the editorship of the Uzbek scholar and linguist Madvaliev (2006), presents the following approach to innovations:

1. *economic*: Funds spent on the economy to introduce new types (generations) of equipment and technologies.
2. Advanced techniques and technologies, management and application in other fields.
3. *linguistic*: New phenomena that have appeared in the current period in a particular language, mainly in the morphology field.

In the “Explanatory Dictionary of the Uzbek Language” innovation is expressed in the form of new types of technologies.

The monograph, co-authored by leading scholars of Uzbekistan - academician S. Gulyamov, professors N. Jumaev, D. Rakhmonov and M. Tashkhodjaev (2019), describes the peculiarity of innovation and substantiates the specifics of the intellectual potential during its creation. In particular, the following options are proposed for the transition to the innovative knowledge-based economy:

- introduction of advanced technologies from abroad (often without being able to efficiently use technical capabilities. We cannot use even 20-30% of the software capabilities of imported computers and mobile phones).
- raising cost efficiency by modernizing technologies imported from abroad and expanding the scope of their use (for example, areas, where metal materials are replaced by plastics, are increasing).
- own development and export of new technologies through the purchase, modernization and export of patents and licenses from abroad (for the production of the next motor vehicle, the demand for iron, rubber, plastic and other natural and material resources is increasing).
- importing food products (to preserve natural, material resources and the environment for the next generation) through income from the export of patents

(copies) due to our formation of innovative ideas and production of intellectual products (ICT software products do not require land, water and material resources), natural, material resources and ecology to save our next generations!

Moreover, in other research papers of D. Rakhmonov (2019), it is stated, that there are significant differences between innovations and novelties. In particular, to have the status of innovation, first of all, a new idea must comply with the majority of the following requirements, namely:

- saving time;
- cost reduction (saving resources);
- absence of negative impact on the environment.

Professor D. Rakhmonov concerning the financing of innovations accepts the three criteria, specified above, as a basis. Furthermore, he highlights these three factors, which reflect the difference between innovation and novelty.

Researcher S. Giyasov (2019) in his scientific conclusions provides the following statement to innovation and investment activity: "it is advisable to provide tax incentives for innovation and investment activities only on certain conditions, based on the results of the activities of companies, that is, according to the principle "incentives - investments – results" or "incentives - innovations – results". Also, "it is necessary to abandon the practice of providing incentives in the form of full exemption for an indefinite period for the implementation of innovative and investment activities, and instead introduce the practice of providing tax incentives in reliance upon on such results as a commitment to the results, that is, to raise profitability, create new jobs, the economy of productive forces and growth of export volumes".

A Russian scientist who has studied the impact of tax incentives on innovation and investment activity, A. Lukin has analyzed the experience of 15 innovative developing countries. In his conclusions, he notes that when providing tax incentives in innovation and investment activities, it is required to introduce tax rebates, tax credits, a reduction in tax rates and tax holidays (2010). In our opinion, the role of private investments in the industry is increasing by promoting the transfer of funds from the private sector to innovative activities, which results in the formation of investment sources in innovative projects that cannot be funded from the state budget.

From our point of view, when attracting investments in innovative activities, it is essential to create financial conditions for them and preferences with the specially designated criteria established.

In the research performed by Professor M. Pulatov, specific consideration is given to the assessment of innovative activities. More specifically, he provides and explains the following

approaches and techniques for evaluating intellectual capital or intellectual assets of the company: profitable approach (economic approach); comparative approach (expert approach); cost-based approach (accounting approach).

According to the experience of the developed countries throughout the world, an innovative economy based on science and technology constitutes the basis for socio-economic development. In this regard, the content of an innovative economy, primarily the efficient use of human capital, requires significant investment in it (Pulatov, 2017).

The necessity to attract investment in innovation, according to another Uzbek scientist N. Rizaev (2019), is justified through the following situation: in reliance upon the study of the need for real estate within the framework of globalization, the following conclusions have been formulated: in future, the development and welfare of mankind will in many respect depend on the new objects of intellectual property created based on innovative ideas, and it will contribute to the attraction of additional resources, as well as as a result of the further development of these objects and stimulating the development of the national economy there will be ensured a rapid growth of the national economy, the formation of a new industrial system, and most importantly creation of new jobs, as well as eventually, improving the quality of living standards of the mankind.

Furthermore, the creation of innovations, in turn, is directly related to the conditions established for doing research. Although this issue is inadequately studied in Uzbekistan and some researches provide conclusions on this issue. For example, scientists from Uzbekistan S. Gulyamov, N. Jumaev, and D. Rakhmonov (2019) have investigated trends in budgetary funds for doing research. They note that there has been an increase in the volume of budgetary funds allocated for fundamental, applied research and research of young scientists, although their number has not changed. Thus, they have revealed that in 2012-2016, the number of scientific studies remained unchanged, although the number of funds increased. This, in turn, creates a need to diversify funding sources.

ANALYSIS AND RESULTS

Below we will analyze the implementation of fundamental research and the trends of their financing in Uzbekistan.

From the data presented in Table 1, it is obvious that changes in the number of fundamental projects in 2018-2020 are developing with a downward trend. If in 2018 their total number constituted 376 units, then in 2020 it has decreased to 334 units. In other words, there is a decline both in terms of both social and exact sciences.

Table 1 The number and volume of funding for fundamental projects in Uzbekistan

Years	2018	2019	2020
Number of projects, units			
Social sciences	53	52	47
Exact sciences	323	320	287
Total	376	372	334
Funding volume, million UZS			
Social sciences	6 281,2	10 127,2	11 903,1
Exact sciences	32976,1	53167,9	62491,4
Total	39 257,3	63 295,1	74 394,5

Source: data of the Ministry of Innovative Development of the Republic of Uzbekistan

It should be noted that although the number of projects is decreasing, the amount of funding is increasing. In particular, it is definite that in the period 2018-2020, the funding volume has doubled. When analyzing the amount of funding coming on average for one project, we can notice the following situation: in 2018 and 2020, projects in the field of social sciences accounted for an average of 118 million UZS and 253 million UZS respectively, in the field of social sciences - 102 million UZS and 217 million UZS. As a result of the analysis, based on Table 1, the following scientific conclusions have been developed:

- both in terms of social and exact sciences, there is a downward trend in the implementation of fundamental projects;
- the volume of funding for fundamental projects from the budget is increasing. In particular, the amount of funding per project has doubled;
- the number of projects and the amount of funding are developing in an inverse proportion.

Continuing our research, we consider the trends in applied project financing. Although the financing volume of applied projects from the state budget remains constant, their number has also decreased (see Table 2).

Table 2 The number and volume of funding for applied projects in Uzbekistan

	2018	2019	2020
Number of projects, units			
Social sciences	153	137	118
Exact sciences	939	845	724
Total	1092	982	842

Funding volume, million UZS			
Social sciences	19 556,0	33 901,2	45 193,4
Exact sciences	102669,3	177981,1	237265,2
Total	122 225,3	211 882,3	282 458,6

Table 2...

Source: data of the Ministry of Innovative Development of the Republic of Uzbekistan

It should be noted that the number of applied projects and trends in the funding volume of in the period 2018-2020 are formulated in compliance with the dynamics of fundamental projects that we have studied above. It can be concluded that the specialization (features) of sciences or areas in the implementation of research has not been taken into account.

In developed countries, particular attention is paid to taking into account the peculiarities of science when funding research projects. In this regard, we believe that when funding research projects, it is significant to use a methodology that enables taking into consideration the peculiarities of science.

Table 3 The number of innovative projects and the financing volume in Uzbekistan

	2018	2019	2020
Number of projects, units			
Social sciences	47	26	9
Exact sciences	244	134	48
Total	291	160	57
Funding volume, million UZS			
Social sciences	5 266,5	6 774,1	4 486,5
Exact sciences	27649,4	35564,0	23554,4
Total	32 915,9	42 338,1	28 040,9

Source: data of the Ministry of Innovative Development of the Republic of Uzbekistan

Table 3 provides information on the number of innovative projects and the amount of funding in 2018-2020. As it is obvious, there is a downward trend in the number of innovative projects in this area as well. In particular, the number of projects in the social sciences decreased from 47 to 9, and in the exact sciences - from 244 to 48. It should be noted, that the volume of funding in 2020 has also decreased considerably.

The fact that the number of innovative projects has declined from 160 in 2019 to 57 in 2020 is due to the tightening of project requirements and a sufficient increase in project

selection stages. Herewith, it is worth mentioning, that the amount of funding per project is rising.

In general, although the number of R&D projects did not increase in 2018-2020, there is a growth in the amount of funding corresponding to each project.

As we have already noted, a decrease in the number of projects and an increase in the number of funds allocated on average for one project can be broadly related to the selection of projects and the systematization of their financing processes.

In compliance with the Decree of the Cabinet of Ministers of the Republic of Uzbekistan №133 dated March 9, 2020, the following main objectives of the Scientific and Technical Councils under the Ministry of Innovative Development have been determined:

- organizing appraisal of the research projects under the state order for research activities, development of conclusions based on the results of the appraisal;
- developing proposals for the priority areas formation for the development of science and technology, recommendations for the introduction of the most advanced technologies aimed at the market of competitive scientific and technical products and their participation in relevant competitions;
- elaborating relevant scientific and technical conclusions for the customer on the reconsideration, improvement, registration and approval of the state program of the research activity (if necessary, international cooperation programs);
- working out conclusions and recommendations in reliance upon the results of the examination of projects submitted by non-profit organizations, scientists and specialists, business entities, research and production entities, scientific and technical centres, as well as technoparks;
- revealing and determining plagiarism of the research projects are implemented based on authorship in terms of the public order execution;
- providing conclusions to the customer on the analysis of interim and final reports, monitoring implementation of each research project or the completion of projects, financing promising projects and continuing financing projects;
- developing and adding proposals for the application of the results of research and innovation activities in the sectors of the economy and social sphere;
- analysing and preparing expert opinions on the developed programs for consideration in the collegial body of the customer;
- developing a conclusion on including research centres and higher educational institutions in the list of unique scientific objects;

- developing recommendations for monitoring implementation of the state programs and projects related to research activities, participation in the implementation of the results of their activities in the fields of science, education and production, improvement and activation of research.

From the content of this resolution of the Cabinet of Ministers, it is obvious that the main objective is the transition of research to a qualitatively new level. However, there is a reason to believe that there are some controversial issues in this document. In particular, within the framework of several principles in the formation of proposals for a thematic announcement of a project for including in the public order, there is introduced the standard that determines “the possibility of commercializing the results of the project”.

In our opinion, considering the possibility of commercializing their results when selecting research as a principle, it can become an obstacle to the full implementation of scientific activities on the national scale. In particular, research ideas and proposals developed based on research performed within the framework of socio-economic sciences may not directly bring income, but when applied in practice, they can cause the elimination of socio-economic problems in Uzbekistan by amending relevant legislation. In this regard, it should be noted, that the legislative chamber of the Oliy Majlis does not have the opportunity to acquire the results of projects to apply in legislation the proposals developed within the framework of this study. Therefore, it is advisable to systematize the principle that determines commercialization possibility in the following order:

- formation of specific criteria for commercialization concerning scientific results within the framework of social and exact sciences;
- differentiation of commercialization rules within the framework of research projects - fundamental, applied and innovative categories. In particular, in the case of applying the practice of commercialization concerning fundamental projects, scientists and specialists may have an abstract attitude.

In this regard, we will try to analyze the results of the research done in 2018-2020. After establishing the Ministry of Innovative Development of the Republic of Uzbekistan, the formation of criteria for the research implementation and further strengthening of the regulatory framework in this area results in several positive changes. In particular, the number of international projects constitutes 21, among which 15 are implemented in cooperation with Belarus and 6 - with Germany. The volume of their financing accounts for 5,5 billion UZS and 0,8 billion UZS. Therewith the number of start-up projects in 2019-2020 has increased from 34 to 44, the amount of funding amounted to 38,4 billion UZS.

We will use the data is presented in Table 4 to analyze the results of scientific projects implemented in higher educational institutions and scientific centres. According to these data, it is worth mentioning, that in 2018-2020 such indicators as patenting of research results, implementation in the form of software products are going up. It is noteworthy that if the number of publications in journals included in such scientific databases as Scopus and Web of Science in 2018 was 389, then in 2019 this figure increased and constituted 1110. The number of citations was 2874 and 3436 respectively.

Table 4 Information on the results of the scientific projects implemented in higher educational institutions and scientific centres

№	Indicator	2018	2019	2020*	Total
1	Total number of patents, including:	421	485	65	971
	foreign	23	28	3	54
	Current	375	444	54	873
2	Certificates of software products, including:	645	1280	149	2074
	applied in practice	436	862	96	1394
3	Number of results implemented in practice	840	866	67	1773
4	Number of monographs published	963	1193	191	2347
	Number of publications, including:	18435	29140	3209	50784
	in republican publications	9089	16342	1863	27294
	in international and foreign publications	9466	12905	1368	23739
5	including in the journals included in the database of:	389	1110	509	2008
	<i>Scopus</i>	625	1335	596	2556
	<i>Web of Science</i>	240	264	49	553
6	Citation of articles published in:	2874	3436	889	7199
	<i>Scopus</i>	2460	2353	18252	23065
	<i>Web of Science</i>	1553	1594	379	3526
7	Reports and abstracts of reports, including:	59605	60786	4246	124637
	at the republican conferences	48076	46009	2633	96718
	at the international conferences	11529	14777	1613	27919

* - indicators for the first quarter of this year

Source: data of the Ministry of Innovative Development of the Republic of Uzbekistan

In our opinion, this considerable result has been achieved due to the introduction of advanced approaches to the organization of the research in the formation of these results, as well as the adoption of the Decree of the President of the Republic of Uzbekistan № UP-5583 “On additional measures to improve mechanisms for financing projects in the field of entrepreneurship and innovation” dated November 24, 2018.

CONCLUSION

In conclusion, it should be noted that the following trends have emerged in the implementation of the research results in our country:

- introduction of the practice of risk financing of research results - startups;
- development of the practice of financing public orders within the framework of international funds;
- increasing need to improve the international competitiveness of the research results;
- establishing both technical requirements and scientific requirements for the research results.

Summarizing the results of the foregoing, we have concluded that to raise the efficiency of the research, it is necessary to pay particular attention to the following aspects:

- differentiation of terms in financing the research – herewith it is required to take into account the peculiarities of achieving a scientific result in this very science;
- it is advisable to make a point to the fact in what form (fundamental, applied or innovative) scientific projects should be carried out in the implementation of the principle of research results commercialization;
- when financing projects, it is recommended to introduce the practice of directing state budget funds to social projects and private sector funds to commercial projects. Thereat it is necessary to take into consideration that fundamental projects are social, and innovative projects mostly pursue commercial benefits.

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