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Methodology for Studying Problems in the Field of Innovative Development of the Regional Industry Through a Social Survey

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Abstract: Despite the intensive implementation of a number of works on the problems of innovative development in the regions, its social and economic content, a comprehensive approach to the formation of a mechanism for managing innovative development, there is currently no complete work on the strategy for increasing the effectiveness of the mechanism for managing the innovative development of the region's industry. This article examines problems in the field of innovative development of industry in the Republic of Karakalpakstan through a social survey and develops a methodology for their solution. Proposals and recommendations for the innovative development of the region's industry are presented.

Keywords: Region, industry, innovation, innovative development of industry, innovative development of industry, strategy, innovative management.

1. Introduction

Most of the problems in the field of regional industrial production are well known by now, but at the same time, taking into account the specifics of each region in its socio-economic development, the sources and factors of these problems manifest themselves in different regions. Accordingly, for example, in regions with relatively better industrial development, the level of socio-economic growth is also quite high, while in other regions the slowdown in industrial production has a certain negative impact on other sectors - in this regard, due to the decrease in the volume of deliveries of industrial products in the regions, there has been an increase in the use of imports, which has led to serious problems in the socio-economic development of a number of regions.

The theoretical aspects of managing the innovative development of industry at the regional level and the scientific foundations of industrial management have been widely studied in the CIS countries over the past few decades by N.K.Yuldoshev, Sh.A.Mirsaidova, Y.D.Goldman, Sh.N.Zaynutdinov, X.T. Mukhitdinov, U.G.Gofurov, A.M.Qodirov, M.Mahkamova, R.N.Nurimbetov, Sh.I.Otajanov, A.Artikov, S.Saidkarimova, I.Abdullayev, N. Ayimbetov and others on innovative development, assessment of innovative potential, stimulation and optimization of innovative development of industry, increasing the efficiency of the innovative development mechanism, and the theoretical and methodological foundations of the innovative management system of the economy in Uzbekistan, the problems of their introduction into the subjects and sectors of the regional economy.

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2. Materials and Methods

The article was written using methods such as systematic analysis and synthesis, economic-mathematical and economic evaluation methods of innovative projects, modeling, forecasting methods, expert evaluation, and questionnaires.

However, in the above scientific studies, the development of strategies for increasing the efficiency of the management mechanism for innovative industrial development in the regions of our country was not studied as a separate object of scientific research. In this research work, the characteristics of the region were taken into account when developing a strategy for increasing the efficiency of the management mechanism for innovative industrial development in the Republic of Karakalpakstan, which determines the relevance of the selected research topic. In particular, Sh.N. Zaynutdinov studied the development of conceptual approaches to the strategy for increasing innovative potential, AM Kadirov studied the problems of developing the innovative potential of industrial enterprises, and MAMahkamova studied the issues of forming organizational and economic mechanisms of industrial enterprises of the Republic of Uzbekistan. Also, the research of Sh.I. Otajanov and other scientists studied the effectiveness of organizational and economic mechanisms for managing the structure of innovation activity and the problems of increasing innovative potential[1].

3. Results and discussion

Taking these aspects into account, a questionnaire survey was conducted to identify problems that have arisen in the industry of the Republic of Karakalpakstan in order to develop scientifically based proposals and recommendations for improving the methods of increasing the efficiency of innovative development of the industry of the specified region for the purpose of research.

Conducting a questionnaire survey is one of the most common methods among researchers. Among the advantages of a questionnaire survey is the fact that it covers a very wide range of respondents, which allows researchers to obtain a wide range of information. Depending on the research problem, there are a wide range of options for conducting a survey - at home, at work, at leisure, in a public place. In particular, the questionnaire is representative, which means that it is subject to certain statistical errors or deviations, and when the sample is properly directed, it is also convenient for obtaining the necessary information about the main problems.

Among these, it is also necessary to highlight the following advantages of the questionnaire:

- responses are provided personally and independently by respondents;
- high level of reliability of information obtained from respondents;
- unify the structure of questions in accordance with the problem being studied;
- the possibility of statistically testing the research hypothesis;
- the possibility of using mathematical and statistical methods in analyzing the responses obtained from the questionnaire.

We have set the following goals for studying the problems in the field of innovative development of regional industry through a social survey:

- a) determining the level of satisfaction of a wide range of consumers with the development of the activities of industrial enterprises and the quality of their products;
- b) identify problems in the regional industrial sector and identify possible ways to solve them, and on this basis develop proposals and recommendations for scientifically based measures;
- c) to increase the efficiency of enterprises and organizations in the industrial sector of the region, to identify opportunities for using the necessary methods and techniques in this direction.

In order to achieve the goal of the research and identify opportunities for increasing the efficiency of the innovative development of the regional industry, a social questionnaire program was developed, which included 16 questions. This questionnaire program includes the stages of compiling questionnaire questions, distributing them among different respondents, collecting questionnaire responses, statistically processing the responses, and drawing conclusions. The questionnaire consisted of the following:

- 16 questions designed to determine respondents' opinions on the issues under study;
- 104 multiple-choice answers, from which respondents must choose one;
- socio-professional profiles of expert respondents (gender, age, education, profession, position, etc.).

This questionnaire survey was designed to involve representatives of various segments of the population living, working, and consumers of industrial goods in the Republic of Karakalpakstan and some other regions. The work on conducting the questionnaire survey was carried out in May 2022.

A total of 570 respondents participated in the expert survey, and we selected 387 of them who provided answers that could provide us with more complete information about the current state of the industry in terms of their level of education, familiarity with the problem being studied in the research work, logical completeness of the answers, and similar characteristics[2].

Accordingly, the respondents included in the expert group were identified as belonging to the following types of activities:

- Representatives of households belonging to individual (personal) consumers of industrial products (pensioners, housewives, temporarily unemployed individuals for various reasons, but able-bodied) - 7.3% (28 people);
- managers and technical staff of enterprises and organizations operating in the industrial sector - 27.4% (106 people);
- scientists, researchers and students engaged in scientific research and studies in the field of industrial production and its organization - 12.4% (48 people)
- Representatives of state, local and other bodies and organizations dealing with issues of management, financing and development of the industrial sector - 52.9% (205 people)[3].

If we analyze the answers given by respondents to the questions of the direct questionnaires, they revealed the following situation.

Among the total number of responses to question 1 of the questionnaire, which was designed to determine the current situation regarding the innovative development of the region's industry, responses describing the situation as improving predominate (Figure 1).

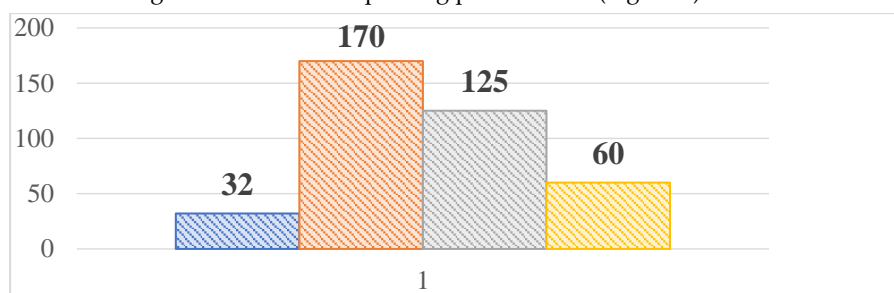


Figure 1. How do you assess the level of development of innovative activity in the Republic of Karakalpakstan?

This is for Figure 1 for example, to the question “How do you assess the level of development of innovative activity in the Republic of Karakalpakstan?” 32 respondents or 8.2% answered “very effective”, while 170 or 43.9% answered “effective”. This means that more than half of all respondents (52.1%) gave such a positive answer. This means that the majority of the region’s population is somewhat satisfied with the pace of development of local industry.

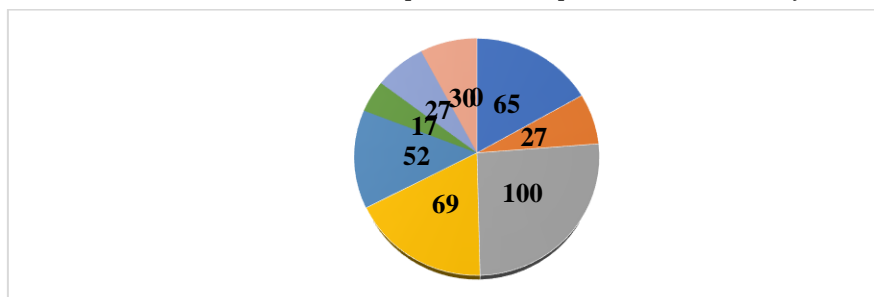


Figure 2. In your opinion, what factors hinder the development of innovative activity in the Republic of Karakalpakstan?

This is for Figure 2 those who consider the state of innovative development of industry in the region to be “ineffective” accounted for 32.5% or 125 of all respondents. The number of those who found it difficult to answer was 60 people or 15.5%. It should be noted that among consumers of industrial products, respondents to the survey, when asked “What factors do you think hinder

the development of innovative activity in the Republic of Karakalpakstan?”, most often indicated the negative impact of financial (100 or 25.8%), personnel (69 or 17.8%), and economic (65 or 16.7%) factors (Figure 2). These factors are of great importance in the innovative development of the region's industry.

Other answers to this question include political, management, information and communication, production, institutional and legal and regulatory factors, and their share in the total number of answers is not as large as in the above three answers. In addition, the fact that there is no respondent expressing an opinion on this question indicates that the specific characteristics of the innovative development of the region's industry have not yet been formed, and as a result, the respondents do not have an opinion on this issue[4].

The question of what should be paid attention to in activating the innovative development of the regional industry was asked to choose one of seven possible answers. The breadth of the answer options indicates the breadth of opportunities for the innovative development of the industry of the Republic of Karakalpakstan. Accordingly, 82 respondents (21.1%) noted that among such opportunities, attention should be paid to “establishing an effective innovation mechanism between business, science and education.” Next in line was “To create a system of financial support for the creation, development and implementation of innovations and the improvement of innovation infrastructure”[5] were ranked first, accounting for 75 respondents (19.3%). Respondents who favored paying more attention to “organizing high-quality state management of the innovative sector” took the next place, accounting for 16.3% or 64 respondents.[6]

The respondents' opinions on the state of innovation management in the process of industrial development in the region are also unique. For example, 60 respondents (or 15.5%) assess the state of innovation management in the region's industry as "very effective."

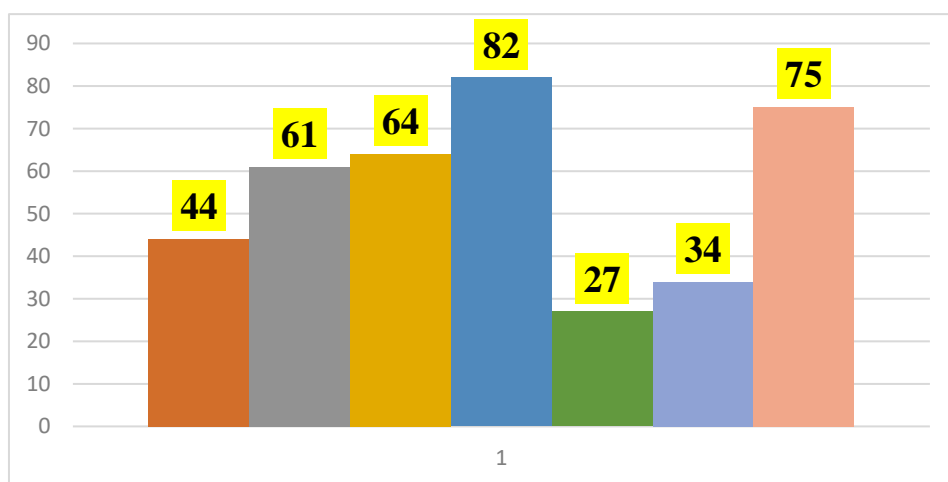


Figure 3. What do you think should be paid attention to when activating innovative activities in the region?

This is for Figure 3 the share of those who consider the state of innovation management to be “effective” is 194 (or 50.1%), which is more than half of the total number of respondents in the survey - it should be noted that respondents in both categories are mainly representatives of state administration agencies and households. The number of respondents who rated this issue as “ineffective” is 69 (or 17.8%), and these are mostly from the category of those who work in industrial enterprises themselves and are more familiar with the process than other groups of respondents. The number of respondents who found it difficult to express their opinion or answer the question posed was 64 (or 16.5%).

Also, the following answer options were revealed when asked to assess the level of innovative development of the industry (Table 1):

	IndustryHow do you assess the level of innovative development of?	387
A	I think it is very effective.	24

B	I think it is effective.	64
C	I think it is ineffective.	184
D	I find it difficult to answer.	115

The answer options for this question show that the level of innovative development of industry in the Republic of Karakalpakstan cannot yet be considered perfect, since more than half of the respondents to the survey either rate it as ineffective (47.5%) or say that they have difficulty answering this question (29.7%) - this indicates that due to the relatively low level of innovative development of the region's industry, there are still not many positive views on this issue among the region's population.

The respondents' opinions on the changes in the level of development of innovative activity in the regional industry as a result of the measures taken to reform the economy of our country over the past five years are also diverse. For example, a large proportion of respondents (249 or 64.3%) noted positive changes in the innovative development of the regional industry, while the rest gave answers such as "negative" (36 or 9.3%), "no change" (57 or 14.7%) and "I find it difficult to answer" (45 or 11.6%).

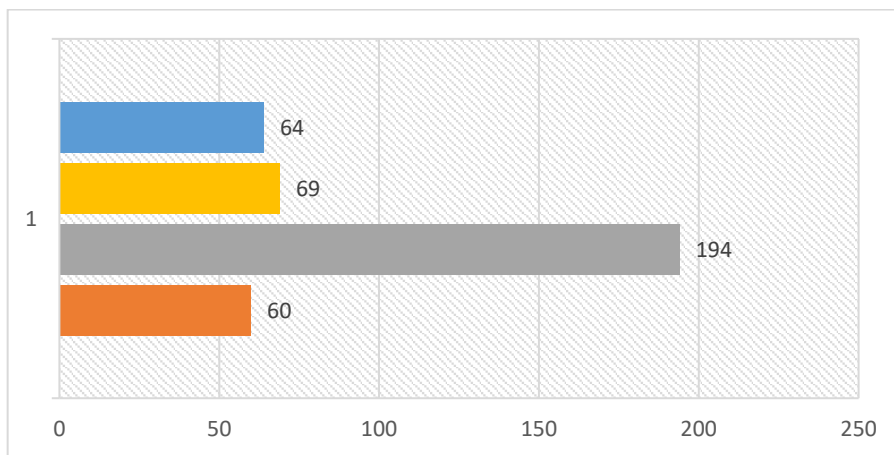


Figure 4. In your opinion, what is the level of organization of innovative management in industrial development?

In addition, the answers to the question asked to determine one of the most important goals of the survey - the prospects for innovative development of the regional industry - were also as contrasting as above. For example, the number of respondents who expected positive changes in the assessment of the prospects for innovative development of the regional industry in the future was 282 (72.8%), those who believed that "negative changes will occur" were 30 (7.7%), those who believed that "there will be no changes" were 29 (7.4%), and those who found it difficult to answer were 46 (11.8%).

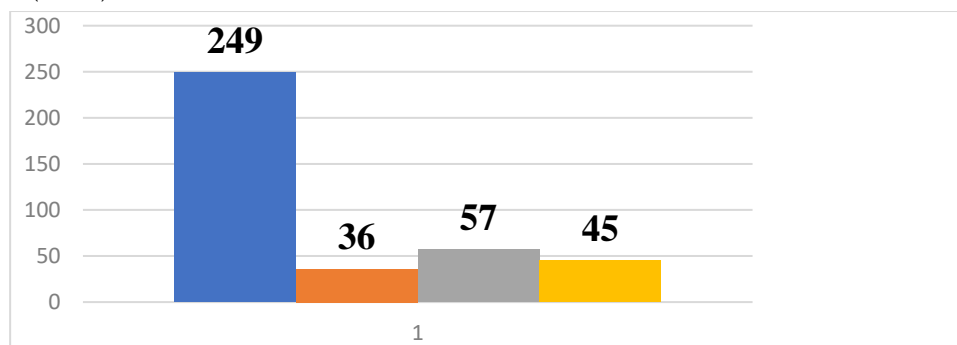


Figure 5: What is the change in the level of development of innovative activity in industry in the region over the past 5 years?

In addition, the answers given to the next question of the questionnaire on the assessment of the current capabilities of the existing human resource potential in the region from the point of view of developing innovations in the industry of the Republic of Karakalpakstan indicate the need to increase human resource potential in the region. In particular, 59 people (15.24%) assessed the human resource potential of the region as "high", while a large proportion of respondents assessed

the human resource potential as “medium” (264 people or 68.2%) - this indicates that the issue of human resources for the innovative development of industry in the region is acute.

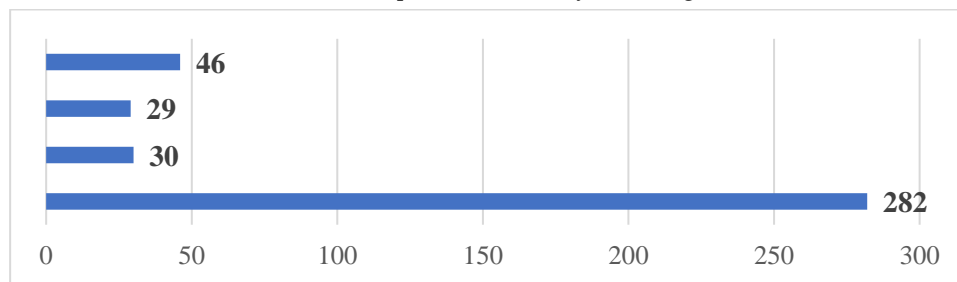


Figure 6. In the industry of the region How do you assess the prospects for the development of innovations?

The next question of the questionnaire on the study of innovative development of the regional industry was devoted to studying the opinions of respondents on the changes that will occur in the regional economy with the improvement of the innovation management mechanism. In this regard, it is noted that the improvement of the innovation management mechanism will lead to positive changes in the region, mainly in the manufacturing industry and the building materials industry. In particular, 140 (36.1%) respondents noted that the improvement of the innovation management mechanism will lead to positive changes in industrial production, while 104 (26.8%) respondents indicated that this process will lead to positive changes in the construction materials production sector in the region.[7]. It should be noted that, in addition to these two areas, the share of respondents who note that this factor will lead to positive changes in other areas of the regional industry is not very large.

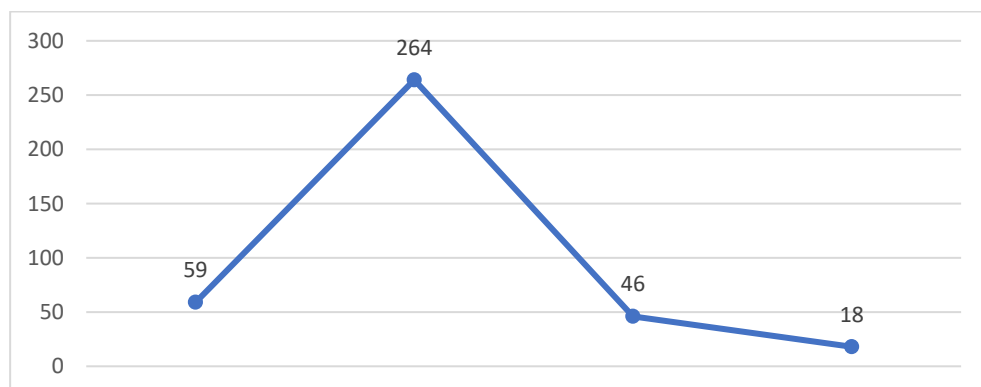


Figure 7. How do you assess the current capabilities of human resources in the Republic of Karakalpakstan from the point of view of developing innovations?

The next question, question 11, consists of four parts and mainly focuses on the regional industry. It was proposed to indicate the problems that hinder the production of products that can compete with foreign competitors and what factors cause these problems in four categories - product price, product quality, market share and obstacles to entrepreneurial activity[8]. The result of studying the answer options given in these four categories revealed that the main obstacles to the development of competitive industrial products in the industry of the Republic of Karakalpakstan are the high cost of raw materials (187 or 48.3% of respondents), lack of quality control (217 or 56.0% of respondents), unsatisfactory marketing analysis (161 or 41.6% of respondents), as well as the ineffectiveness of innovation and investment legislation and the high cost of loans (100 or 25.8% of respondents for both factors, respectively).

To date, when asked what is needed to produce import-substituting industrial products in the Republic of Karakalpakstan, the vast majority of respondents, namely 258 (66.6%) indicated the need for direct investments and financial support at the initial stage of introducing import-substituting products. The share of respondents in the remaining seven areas was not very large[9].

It should be noted that the opinions of local respondents who work in local industrial enterprises and are consumers of the products of these industrial enterprises will be of great

importance in improving the mechanism for managing the processes of innovative industrial development in the region. Taking this into account, When asked what should be done to improve the strategy for increasing the efficiency of the management mechanism for innovative development of industry in the region, the majority of respondents (139 or 35.9%) indicated the need to modernize the innovation management system in the regional industrial complex. The share of responses on increasing the volume of investments in the industry, introducing modern management methods and mechanisms, correctly applying the concepts of innovative management of the industry, choosing the right production strategy, or expressing personal opinions of other respondents was not very large[10].

In addition, a study of respondents' views on what should be the main focus in increasing the efficiency of innovative development of the region's industry showed that most respondents (146 people or 37.7%) emphasize the need to pay attention to improving the mechanism for attracting foreign and private investment[11]. The small percentage of respondents' responses to factors such as rationalization of management methods (52 people or 13.4%), introduction of quality management, use of advanced foreign innovative management practices (52 people or 13.4%), acceleration of the introduction of the cluster system in the industrial sector (54 people or 13.9%), improvement of the introduction of information and communication technologies in industrial sector management (44 people or 11.3%), establishment of integration and cooperative relations with industry enterprises in order to cover the market (34 people or 8.7%), and improvement of the system of effective use of human resources (5 people or 1.2%) were notable[12].

The respondents' views on the current state of organization of the innovation management mechanism at industrial enterprises of the Republic of Karakalpakstan also indicate that much work needs to be done in this area[13]. Because the number of respondents who assessed the level of organization of innovation management at industrial enterprises of the region as "average" was 229 (59.1%), while those who assessed it as "very high" were 25 (6.4%), those who considered it "high" were 62 (16.0%), and those who considered it "low" were 71 (18.3%).

4. Conclusion

These data emphasize the need to implement certain measures to create a modern system of innovative management in industrial enterprises of the region. It can be seen from the above that the respondents indicated various development directions in the system as the most optimal way to increase the efficiency of the innovative development processes of the industry of the Republic of Karakalpakstan[14]. As a result of the results of this questionnaire and a detailed study of the research problem by the author of the article, in the Republic of Karakalpakstan To develop a strategy to improve the efficiency of the management mechanism for the innovative development of industry, it is proposed to first develop a concept for the innovative development of industry, create a model for the innovative development of industry on its basis, and improve the management mechanism for scientific and technological development in the industrial sector[15].

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