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CONCEPTUAL MODEL OF ESTABLISHMENT AND DEVELOPMENT OF SMALL INDUSTRY ZONES

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Abstract: formation and development of KSZ (small industrial zones), economic and ecological conditions and resources of the area where it is located are of great importance. Specific principles of establishment of regional industrial production. Multifactor econometric model of KSZ.

Keywords: Small industrial zone, multifactor econometric model.

Introduction

In Uzbekistan, special attention is paid to the establishment and development of small industrial zones, which make an important contribution to the acceleration of industrial production. In particular, in this regard, the tasks of "modernization and diversification of the leading sectors of the national economy, deep processing of local raw resources, further development of high-tech processing industries, localization of production, achieving deep structural changes in the industry, effective use of the existing industrial potential of the regions" are defined. Currently, efforts are being made to achieve a synergistic effect by implementing the state's industrial policy, socially and economically developing areas with small industrial zones, attracting unused raw materials, labor and financial resources to the production process, and strengthening cooperative relations between enterprises.

Formation and development of KSZ (small industrial zone), economic and ecological conditions and resources of the area where it is located are of great importance. Establishing KSZs in the city, regional center or suburban areas and districts effectively using the industrial product production possibilities of these areas, and their formation creates new opportunities for the development of KKBST.

It can be said that the placement of KSZs on the territory of the republic is also based on the theory and principles of territorial-spatial placement of forms of territorial organization of industrial production.

If we study the KSZ established in 2020-2021 in the republic, Table 3.1 shows that there are 87 of them, and the total land area is 736.8 hectares. 36 of the total KSZs are located in cities, and the remaining 57 are located in district areas. 17 KSZs were established in Tashkent region and 14 in Samarkand region. The fewest KSZs were established in Syrdarya region (2), Andijan (3) and Fergana (4). If we study the area of land allocated to KSZs, the largest area of land is allocated in the city of Tashkent (163.9 hectares) and in the Republic of Karakalpakstan (about 200 hectares). In the city of Tashkent, it also takes the leading place in terms of the average land area per zone, which is 20.5 hectares. This indicator is the highest in the Republic of Karakalpakstan, it is 28.6 hectares. This average figure for the republic is equal to 8.5 hectares. 51 of the total KSZs, i.e. 59 percent, are located in the district territories. The largest number of industrial zones are located in the districts of Tashkent region (13) and in the districts of Samarkand region (13). KSZ will remain an important factor in

Received: July, 18, 2022 / Revised: August, 11, 2022 / Accepted: 28, August, 2022 / Published: 30, September, 2022

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increasing the economic potential of the districts and providing the population with work and income in the future.

Table 1
KSZs established in 2020-2021 in the republic's city and district regions KSZs established in 2020-2021 in the republic's regions

<i>Areas</i>	<i>Number of KSZ</i>	<i>From</i>		<i>Land area, ha</i>
		<i>In city</i>	<i>In region</i>	
<i>Karakalpakstan</i>	7	7	–	200
<i>Republic</i>				
<i>regions</i>	3	2	1	21,5
<i>Andijan</i>	–	–	–	
<i>Bukhara</i>	5	–	5	33,6
<i>Jizzakh</i>	7	1	6	29,8
<i>Kashkadarya</i>	4	2	2	38,2
<i>Navoi</i>	–	–	–	
<i>Namangan</i>	14	1	13	53,1
<i>Samarkand</i>	2	1	1	3,2
<i>Syr Darya</i>	9	1	8	55,1
<i>Surkhandarya</i>	17	4	13	104,87
<i>Tashkent</i>	4	2	2	5,05
<i>Ferghana</i>	7	7	–	22,5
<i>Khorezm</i>	8	8	–	163,9
<i>Tashkent sh.</i>	87	36	51	736,8

KSZs can be located differently in the city area. Within the city, for example, Yakkasaroy KSZ or in the border area (for example, Sergeli KSZ), KSZs differ from each other by their location and the factors affecting them. The advantages of KSZ located in the city include the following: proximity to consumers, convenience of transport services, the possibility of establishing contacts with scientific research and higher education institutions, the possibility of attracting highly qualified specialists, the possibility of developing external cooperation, the city's social, production and use of elements of market infrastructure (for example, use of city transport for KSZ workers, proximity of shops), etc. But the location of KSZs in the city can also cause a number of negative consequences: environment, air pollution, road traffic jams due to excessive traffic on highways, sewage pollution, transformation of roads due to overloading of highways. Therefore, we think that it is appropriate to make additional changes to the selection conditions when placing KSZs in the city, in order to avoid some negative consequences, especially to indicators related to ecology. For example, the correct determination of requirements for noisy and environmentally harmful production, the type of raw materials and their transportation, and the conditions for transportation of finished products will lead to the preservation

of a good environmental condition in the city. Ecological requirements can be partially relaxed when placing types of production in KSZs located on the outskirts of the city, that is, on the border. It is possible to place a wide range of productions in the KSZs being established in the regions of the district. One of the most important problems of KSZs established in the region is the problem of providing production with qualified personnel. There may be highly educated personnel in the district, but it is difficult to find specialized personnel for production. Therefore, KSZs can be divided into three types according to the location of production types: KSZs located in the middle of the city, on the city border, and in the district areas.

KSZs are being established in regions with different natural conditions and different social and economic conditions. These regions differ in terms of natural resources, environmental conditions, and the number and quality of labor resources. Therefore, it is necessary to take into account a number of principles when placing KSZs by region. Among the principles recognized by most scientists, the following can be included: the location of industrial production close to the sources of raw materials, fuel, electricity and the area where consumers are located; placement of production based on comparison of industrial production indicators of regions; from the point of view of achieving maximum efficiency on the basis of appropriate placement of specialized enterprises in the regions, that is, cooperation with local enterprises; excessive concentration of industrial production in cities, development of medium-sized cities and districts; reduce the cost of finished goods by providing transportation and reducing transportation costs. Achieving competitiveness by reducing transport and production costs, obtaining economic rent, and in good economic conditions, the location of industrial production in border zones can have a positive result. The following can be included in the modern principles of location of production: location of production with high labor capacity in an area with excess labor (in an area with cheap labor); placement of production that has a negative impact on the environment in KSZs to be established on the outskirts of the city or on the territory of the district. It is known from the experience of foreign countries that industries that have a negative impact on the environment are located in developing countries (oil refining and petrochemical, gas processing industries are located in the Middle East and African countries). Development of depressed areas to eliminate socio-economic stress and improve the investment environment there; creation of tax and other incentives for private capital by local authorities; reduction (increase) of customs tariffs; the development of empty spaces by firms. While these principles are reasonable, their co-occurrence cannot be ensured in practice. When establishing KSZs, it will be necessary to ensure their proximity to the market, to solve the issues of providing electricity, gas and water supply, transport communication and labor resources. It is possible to solve the problem of not locating production that has a negative impact on the environment in urban areas, by including it as a special requirement in the selection conditions.

The geographical location of the territory, the distribution of finance, goods and raw materials, the possibility of movement of labor and capital and other factors determine the economic policy of the state related to the location of production. The active participation of the authorities in the establishment and development of KSZs is not only an incentive, but also the consideration and

analysis of all external and internal factors affecting the establishment of KSZs when determining the network structure of KSZs and its location.

Here, the placement of KSZs means determining or conducting a selection of its network composition depending on the conditions of the area where this zone is located.

The following can be mentioned as specific principles of establishing regional industrial production. Effective use of the economic potential of the region. Here, if we consider the importance of factors of location of industrial enterprises, they are ranked as follows: provision of electricity, qualified personnel, raw materials, material transport resources. It is known from the experience of Russia that in industrial parks, companies that are known for their efficient production in the world try to create an opportunity to place their branches. Each element of economic potential plays an important role in locating small industrial enterprises: natural resource potential; industrial production capacity; potential of agricultural production; transport and labor capacity. The most important potential of the region is innovation potential, and this potential provides the opportunity to produce new products. In recent years, all countries have paid great attention to the scientific and innovative potential. This is not for nothing, of course, increasing the competitiveness of industries and enterprises, products, can only be done by increasing scientific and innovative potential.

If we rank the scientific potential of the regions in Uzbekistan, the first place is the city of Tashkent, followed by Tashkent, Samarkand, Andijan, Fergana, Navoi and Bukhara regions. For example, the number of scientific research institutes and universities in Tashkent is higher than in other regions. The industrial potential of the above regions is also high.

Use of public-private partnership (PPP). This can be seen as cooperation aimed at developing the economy and social sphere. If we study the world experience, such cooperation is supported in the People's Republic of China, India, Brazil, Mexico and Malaysia. In Russia, more than 300 projects are being implemented using the mechanism of public-private sector cooperation. In practice, it may happen that there may not be enough resources for the implementation of an effective project in the KBXT entities, and the state may not be able to effectively manage some commercial affairs. In such cases, PPP can bring good results. According to V. Varnovsky, public-private partnership is an institutional and organizational combination between the state and business, the purpose of which is to implement important projects and programs for society in industrial sectors.

The author of another work considers that PPP is a long-term and short-term interaction between many partners in accordance with a common goal, achieving material results, sharing income, risks and resources.

The use of PPP is being implemented in foreign countries, mostly in infrastructure networks and management. It can be noted that the use of PPP is activated in the conditions of shortage of funds on the part of the parties.

The main purpose of the state's use of PPP is to transfer the risk arising from the construction, design, planning, financing and use of an object to the private sector.

The goal of the private sector is to get the maximum benefit from the investment project. The use of PPP in KZs increases the investment attractiveness of the zone, expands the resource base, the opportunity to implement projects that cannot be implemented by a state or private enterprise

individually, combining resources during project implementation ensures the superiority of the KZ product's competitiveness and leads to synergistic effects, shortens the construction period of KZ reduction is achieved.

It is known that business is dynamic in relation to state institutions, makes quick decisions, seeks to use new technologies and innovations, and quickly communicates with partners. State bodies play an important role in the successful and rapid establishment of KSZs: they form a regulatory framework, implement organizational measures, use financial mechanisms (loans, tax incentives and other incentive mechanisms).

Businesses, especially small businesses, do not want to invest in expensive innovation projects. For example, a small business may not have the opportunity to purchase advanced foreign equipment or technology. If this equipment and technology is purchased on the basis of public-private partnership, the business will also benefit, the state can not only return the cost, but also receive additional benefits. According to the regulation "On public-private sector partnership in the field of preschool education" approved by the decision of the President of the Republic of Uzbekistan dated April 5, 2018 PQ-3651, the development of preschool educational institutions on the basis of public-private sector partnership is being effectively implemented in our republic. It is known that it is difficult to implement educational work at a high level in state kindergartens. In private kindergartens, these activities are carried out qualitatively. When the state and private entrepreneurs work together, the state allocates free land to business, creates benefits, provides methodical support for education and upbringing of children, and business provides high-level education to children. As a result, government expenses are saved, businesses benefit, children get quality education and go to the 1st grade. The combination of public and private sector resources leads to the implementation of preschool education at a high level.

State support. [1] The main principles here are: the effectiveness of measures supported by the state; Construction of KSZ infrastructure.

Among the state support measures, the following can be cited:

- tax and financial: credit benefits, tax rate reduction; subsidizing the cost of the building to be purchased; microloans and preferential loans, use of funds from various funds; allocating a subsidy to cover part of the costs of construction and reconstruction of engineering and infrastructure facilities; preferential use of land and other resources; preferential setting of rent; payments to the local budget and debt restructuring.
- Proprietary measures: to give as private property to residents who have been operating in the industrial park for more than 10 years.
- Consulting: establishment of consulting services by public authorities (with the help of specialized firms).
- Distribution of powers and risk distribution of participants in the establishment and development of KSZs.

Risks are divided into the following types: political, economic, network, administrative, legal, ecological, Persian-Major; risks associated with residents (violation of the work plan, violation of partnership terms, overspending, incompleteness of project documents, risk of technological production, incomplete information about the business ability and financial condition of partners, in

addition to economic crises, inflation, fluctuations in the market situation, legislation risks associated with unexpected changes and other circumstances).

It is possible to single out the principles that are important in the establishment and development of KSZs: public and private sector partnership; state support measures; Risks in establishment and development of KSZs; the principle of "one-stop shop" for advice. Adherence to the above-mentioned principles will lead to effective establishment of KSZs.

Establishing interaction of KSZs with scientific research institutes, institutes and universities. Such contacts are of great importance in establishing the supply of KSZs with specialist personnel, developing new technical developments on the basis of the order and accelerating the work of putting them into practice.

Development of cooperation between KSZ participants and local industrial enterprises. Such cooperation will lead to diversification of production in KSZ and achievement of synergy effect and will have a positive effect on the multiplicative development of the regional industry.

State support of KSZs. This principle helps the participants of the zone to implement the industrial policy of the regional government. It is an important factor in the production of exportable, competitive products based on advanced foreign technologies.

We believe that it is appropriate to make a special mention of the KSZs to be established in the city of Tashkent. Because the GNP, production of industrial products, human resources and scientific and technical potential of Tashkent city are much higher than other regions. Therefore, we believe that it is appropriate and promising to establish KSZs aimed at the production of innovative, scientific and high-tech products in Tashkent. It would be appropriate to increase attention to the development of small enterprises belonging to the branches of science and technology development - electronics, electrical engineering, computer engineering, telecommunications, mechanical engineering, chemistry and other industries. Here, the development of innovative business, which plays an important role in the introduction of new scientific and technical developments into production, that is, the establishment of technological parks, innovation centers and business incubators, can be considered as a promising direction. Increasing competition in the production of industrial products leads to an increase in demand for innovative products. The patent market is also one of the factors of innovative development. In this regard, the creation of a legal basis for the development of the patent market can be considered one of the important issues. In the United States of America, the ownership of the patent holder is retained for 17 years. The enterprise that uses the patent transfers a certain part of the profit to the patent owner for 17 years.

We think that regional authorities should be interested in establishing KSZs. Because establishment of KSZs, creation of new jobs in the region, income to the region's budget, increase of population's income and socio-economic development of the region. Loss-making, low-profit organizations are limited in the regions, and in some districts, such organizations are almost non-existent. For example, Okhdarya, Ishtikhan, Pstdargom and other districts of Samarkand region are included in these districts. Similar districts can be found in other regions. For this reason, we believe that it is appropriate to establish KSZs of the Greenfield type (in empty areas where nothing has been built) in some regions.

Due to the fact that there is almost no information on the dynamics of the volume of industrial products produced by KSZs in the Republic of Uzbekistan, and taking into account the fact that their products are included in the KBXT industrial product and the tracking of the republic's industrial product, forecasting models of the KBXT industrial product and the republic's industrial product were developed. The factors involved in the multi-factor econometric model influencing the increase in the volume of industrial products produced by KBXT entities were obtained.

As factors participating in the multi-factor econometric model - the resulting factor - the volume of industrial products produced by small businesses, billion. soums (Y) and investments in the capital of small business and private enterprises in the industrial sector as factors affecting it, bln. soums (X1) and the number of workers employed in small business and private entrepreneurship in the industrial sector, thousand people (X2).

The following correlation matrix was calculated between the gross product of the industrial sector of the Republic of Uzbekistan and the factors affecting it, Table 3.9.

Table 2
Correlation matrix of connections between factors

	Y	X ₁	X ₂
Y	1		
X ₁	0,9762	1	
X ₂	0,9626	0,9251	1

From the data in Table 2 above, it can be observed that there is a direct relationship (0.9762) between private correlation coefficients, i.e., the resulting factor (Y) and the influencing factor - investments in the capital of small businesses and private enterprises in the industrial sector (X1). There is also a positive relationship (0.9626) between the output factor (Y) and the number of workers employed in small businesses and private enterprises in the industrial sector (X2).

Based on these factors, we will create a multi-factor econometric model with the volume of production of industrial products of the Republic of Uzbekistan and the factors affecting it, and it has the following form.

$$y = -71991,6 + 4,9246x_1 + 73,1530x_2 \quad (3)$$

(-3,07) (4,76) (3,31)

The values given in parentheses are the calculated values of the t-Student test, which determines the reliability of each factor, and they are reliable.

According to this multi-factor econometric model, investments in the capital of small businesses and private enterprises in the industrial sector (X1) amount to 1 bln. if it increases to 4.9246 billion soums, the volume of industrial products produced by small businesses is on average 4.9246 billion. as it may increase to soums. If the number of workers (X2) employed in small business and private

entrepreneurship in the industrial sector increases by 1 thousand people, the production volume of industrial products will average 73.1529 billion. may increase to soums.

As a result, the coefficient of determination R^2 representing the coefficient amounts was equal to 0.9776. This shows that the resulting factor has a sufficiently strong relationship with the selected factors, that is, the volume of industrial output produced by small businesses is 97.76%, investments in the fixed capital of small businesses and private enterprises in the industrial sector included in the multifactor econometric model (X1), small enterprises in the industrial sector the number of workers employed in business and private entrepreneurship depends (X2). The remaining 2.24 percent is the influence of unaccounted factors.

The coefficient of determination equal to 0.9776 means that there is a strong relationship between these economic indicators in the model. In order to be able to compare models with different number of factors, and this number of factors does not affect the R^2 statistic, a smoothed coefficient of determination is usually used, i.e.:

$$R_{\text{текис}}^2 = 1 - \frac{s^2}{s_y^2} \quad (4)$$

In this case, this smoothed coefficient of determination should be equal to the value of 0.9731 and its R^2 close to means that the model can accept values around the change in the number of influencing factors.

We use Fisher's F-criterion to determine the statistical significance of the constructed multifactor econometric model (3) and its compatibility with the studied process. Calculated value of F-criterion $F_{\text{оёниá}} = 217,7696$ is equal to If the calculated value is greater than the value in the table, then the constructed multifactor econometric model is said to be statistically significant or adequate for the studied process. Table value of F-criterion $F_{\text{æááááæ}} = 4,10$ is equal.

$F_{\text{хусоó}} > F_{\text{жаóвал}}$ satisfies the condition, which indicates that the calculated value of the F-criterion is greater than the value in the table and is statistically significant.

The Student's t-test is used to check the reliability of the parameters and correlation coefficients of the above multifactor econometric model (3).

The tabular value of the t-criterion when confidence probability and degree of freedom is equal $t_{\text{æááááæ}} = 2,2281$.

Also for the calculated parameters in the multifactor econometric model on the volume of industrial output produced by small businesses $t_{\text{calc}} > t_{\text{table}}$ condition must be satisfied.

In this example, the factors of investments in the fixed capital of small businesses and private enterprises in the industrial sector (X1) and the number of workers employed in small businesses and private enterprises in the industrial sector (X2) fully satisfy the above condition.

(3) we use the Darbin-Watson (DW) test to check for autocorrelation in the residuals of the resulting factor according to the model:

If there is no autocorrelation among the residuals of the resulting factor, $DW = 2$, in positive autocorrelation DW tends to zero, and tends to 4 in case of negative autocorrelation.

If there is no autocorrelation in the residuals of the resulting factor, then the value of the calculated DW criterion will be around 2. The value of the DW criterion calculated in this example is 1.607. This indicates that there is no autocorrelation from the resulting factor residuals.

We calculate the coefficients of elasticity of the factors.

The elastic coefficient of investments in the fixed capital of small businesses and private enterprises in the industrial sector is equal to 0.4833. If the investments in the fixed capital of small businesses and private enterprises in the field of industry increase by 1 percent, the production volume of industrial products increases by 0.4833 on average.

The coefficient of elasticity of the number of workers employed in small business and private enterprise in the industrial sector is equal to 3.2793. If the number of workers employed in small business and private enterprise in the industrial sector increases by 1 percent, the volume of industrial production increases by 3.2793 on average.

For this, we construct time trend models of each influencing factor. That is, we take the factors X_1 and X_2 that affect the resulting factor Y as time-dependent. Time-dependent models are called trend models. Their appearance is as follows: $X_t = b_0 + b_1 \cdot t$. (7)

A trend model for investments in the fixed capital of small businesses and private enterprises in the field of industry:

$$X_1 = -2274,83 + 690,34 \cdot t .$$

A trend model for the number of workers employed in small businesses and private enterprises in the industrial sector:

$$X_2 = 919,75 + 35,49 \cdot t .$$

Using trend models for the above factors, we forecast the value of each factor for the years 2022-2026, and putting the values of the forecast results (3) into a multi-factor econometric model, we forecast the resulting indicator - the volume of industrial products produced by small businesses for the years 2022-2026 . Forecast results Using trend models for the above factors, we forecast the value of each factor for the years 2022-2026, and putting the values of the forecast results (3) into the multi-factor econometric model, the resulting indicator is the volume of industrial products produced by small businesses for the years 2022-2026 is predicted.

During the forecast period, the number of workers employed in small business and private entrepreneurship in the industrial sector of the republic has a tendency to grow by an average of 1.02 percent per year. This is due to the fact that not only traditional industries, but also innovative industries are being given great attention. Therefore, during the forecast period, the number of workers employed in small businesses and private enterprises in the industrial sector is increasing.

If the share of KSZ product in KBXT industrial product in 2021 is kept at 1.52 percent, by 2026 KSZ product will be 1398.6 billion. amounts to soum.

Econometric modeling and forecasting of industrial production in the Republic of Uzbekistan is one of the most urgent issues today. In order to analyze the development indicators of the industrial network, it is first necessary to determine the factors determining the effectiveness of the network. For this, it is appropriate to use the method of multifactor linear econometric modeling. Factors

participating in the multifactor econometric model are important in studying the effects on industrial production efficiency..

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