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ECONOMETRIC ASSESSMENT OF THE INNOVATIVE POTENTIAL OF SMALL BUSINESSES

Abstract: It is also important for small businesses to engage in innovative activities and make use of innovations as they move towards innovative development of the national economy. It is necessary to identify the innovative potential of small businesses in ensuring their innovative development at the national or regional level. The article proposes that the evaluation of the innovative potential of small businesses is determined by the use of economic and mathematical, econometric methods, which can identify the obstacles for the enterprise to use advanced innovations and implement innovations. As a result, measures will be taken to influence the indicators included in the innovative potential component groups to help achieve the socio-economic goals. This method also allows comparing the innovative potential of several small businesses in a given region.

Key words: potential, small business, socio-economic development, modeling, econometrics.
Language: English

Introduction

Compact, mobile, innovative and flexible small businesses play a key role in introducing innovations that are the basis of high and sustainable economic development. Modernization and diversification of the economy can be achieved more quickly by developing guidelines for improving the innovative activity of small businesses. To do this, it is necessary to first evaluate the innovative potential of small businesses and draw appropriate conclusions based on the results.

The transition of the world economy to an innovative path of development is not the subject of scientific discussion. On the one hand, this is a scientific paradigm formed by institutional views of the modern development of economic systems, and, on the other hand, it is the reality of the international economic system, due to the processes of globalization, specialization, informatization and other challenges of the development of society in the transition to the VI technological structure. "Innovative economy" is not only a scientific concept,

but also an objectively established economic system of relations between productive forces and society, caused by a new competitiveness factor - the level of innovative products, technological processes, marketing and organizational decisions of an enterprise, industry, and state. The basis of the competitiveness of a modern entrepreneur is determined by "... the constant maintenance of labor productivity at a higher level than that of competitors, using the continuous process of acquiring and introducing innovations". That is why the key factor in developing the competitiveness of the economic system is "... investing in areas with a high level of innovation potential". Accordingly, the task of "... forming a methodology for identifying and evaluating innovative potential aimed at solving the global task of improving investment efficiency" is set before modern economic science. This position expresses the relevance of the study of issues of assessing innovative potential from the perspective of developing the academic foundations of modern economic theory, in particular the relevant sections

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and disciplines of innovation and investment management.

The general fundamentals of small business and private entrepreneurship, the issues of its development and evaluation have been studied by many foreign scientists. Including the works of L. Vodachek, T. Geobro, R. Drucker, D. Clark, L. Mizes, S. Peters, A. Smith, F. Hayek, R. Hezrich, A. Hosking, Y. Schumpeter, and others. is possible.

Literature review

Scientists from the CIS countries Yu.Arutyunov, V.A. Bykov, P. Verkhan, L.P.Goncharenko, L. Dashkov, R.S. Golov, I.Kratko, A.V. Livshits, V.A. Makarov, B.Z.Milner, A.M.Muhamedyarov [1], Yu.M.Osipov, Yu.Ravenskii, T.Ghilosofova, R.A.Fatkhuddinov [2], Medynsky V. G., Sharshukova L.G. [3], Baldin K.V. [4], Shokina L.I. [5], Filosofova T.G., Bykov V.A. [6], Goncharenko LP, Arutyunov Yu.A. The scientific and theoretical and practical bases of development and management of small business have been studied in the work of JP Yankowski [8] and others.

The problems of small business development in Uzbekistan, including the development of innovative activities by S.Gulomov [9], Y.Abdullaev [10] and B.Goibnazarov [11] cover general issues of small business development. M. Kasimova, A. Bekmurodov, N. Yuldashev, and I. Mirzaev [12] conducted research on small business management. In scientific works of A.Rasulev [13], R.Alimov, A.Kodirov [14] and Sh. Otajonov, the basics of national innovation system formation are described. Features of organization of production at light industry enterprises and improving logistics were studied by several scientific works of Tursunov B. [16;17;18;19;20;21;22;23; 25]. Innovative ways of development of Uzbekistan agroindustrial complex were researched by Russian and Uzbek scintists as well as Nuritdin Yuldashev, Vladimir Nabokov, Konstantin Nekrasov, Bobir Tursunov [24].

Based on scientific research, the most important sources of innovation potential of small businesses are the staff, financial, economic, production and scientific and technical resources of the enterprise.

Analysis and results

In order to economically assess and analyze the innovative potential of small businesses, the organizational and economic performance of several small businesses operating in various industries in Navoi region in 2016-2018 was used. At the same time, 48 types of indicators representing different aspects of small businesses were divided into 4 groups. 9 indicators related to the enterprise's employees as indicators of the innovation potential (average number of employees, proportion of higher education staff, research staff, number of innovators, etc.); 12 production units (fixed capital; average

annual cost of fixed assets; annual production volume; labor productivity, etc.); 19 financial and economic (annual growth of assets; equity in assets; turnover rate; profit; profitability indexes) and 8 scientific and technical indicators (patent, license, trademark) • Increasing costs for innovative activities; the share of experience, research, laboratory equipment in the volume of fixed assets, etc.

Correlation analysis revealed that 24 of the indicators of innovation potential are correlated with economic growth, which is considered as an indicator of the innovative potential of the enterprise. At the same time more attention was given to the correlation coefficient from 0.5 to 1.

In order to exclude the correlation indices, seven other correlated indicators were excluded from the system using a pairwise correlation matrix. As a result, the number of indicators needed to assess the innovative potential of small businesses has been reduced to 17.

Given the above, we recommend the following methodology for assessing the innovative potential of small businesses.

The following formula is based on the econometric evaluation of innovation potential:

$$Z = \sum_{i=1}^{M} Z_i,$$

Z - the result is always a coefficient between 0 and 1, which characterizes the innovation potential of the enterprise;

Z_i – innovative potential i- group potential;

M – The number of small groups in the innovation capacity of small businesses;

Z_i - as follows:

$$Z_i = \sum_{j=1}^{m} s_j \cdot n_{ij}, \qquad \sum_{j=1}^{m} s_j = 1$$

n_{ij} – representing innovative potential i- group j-indicator;

s_j- j- indicator value;

m - number of indicators of i-group of innovative potential.

Significance of innovation potential is determined by the Fishburne rule.

$$S_j = \frac{2 \cdot (g - j + 1)}{(g + 1) \cdot g} \quad ;$$

g - the total number of indicators in the system;

j - the number in which the innovation capacity group is ranked on the decline in value.

$$n = 2^{-\frac{k_{\text{урт}}}{k}}$$

k - An indicator that determines the innovative potential of a small enterprise this year;

$k_{ÿpm}$ – the average value of several (small) small businesses in the region by k.

$$k_{\text{урт}} = \frac{1}{m} \cdot \sum_{j=1}^{m} k_j$$

This method allows comparing the innovative potential of several small businesses in a given region. So we call this method a static calculation.

In addition, we can calculate the innovative potential in a dynamic way by comparing only one enterprise's performance with that of the previous period:

$$n = 2^{-\frac{k_{t-1}}{k_t}}$$

k_t – k Indicator value for the current year;

k_{t-1} – k indicator for the previous year.

If k is a monetary value, we make adjustments to inflation:

$$n = 2^{-\frac{k_{t-1}\cdot(1+\partial_t)}{k_t}};$$

∂_t – the official inflation rate.

The results of the innovative potential of small businesses can be classified according to the econometric evaluation criteria shown in Table 1 below.

Table 1 Classification of small enterprises by indicators of innovative potential

Business description	Indicator value (Z)
High level of innovation potential	>0,7
Innovative Potential	0,5-0,7
Moderate innovation potential	0,3-0,5
Low innovative potential	<0,3

The proposed methodology for econometric evaluation of the innovative potential of small businesses will allow:

- Assessment and comparison of indicators of different sizes by bringing them into one coefficient;
- taking into account the level of inflation in the evaluation of innovative potential of different periods;
- Determining the value of each group of innovative potential components;
- reviewing the innovation potential for a single enterprise, as well as for a number of small businesses;
- Develop a system of measures that will influence the indicators included in the innovative potential components to help achieve the intended socio-economic objectives.

This methodology summarizes the innovative potential of some small businesses operating in various sectors of the economy of Navoi region using econometric methods. These results are presented in Table 2.

Table 2. Innovative potential of small businesses in Navoi region

Name and area of activity of small businesses	Innovative potential					
	Dynamic method			Static method		
	2016 y	2017 y	2018 y	2016 y	2017 y	2018 y
Rustam-Nichol (Polygraphy)	0,109	0,121	0,115	0,464	0,511	0,489
Umid 2001 (trade)	0,113	0,116	0,117	0,487	0,498	0,513
Capital - Capital	0,132	0,107	0,124	0,477	0,476	0,506
Osuda (agriculture)	0,124	0,118	0,126	0,492	0,498	0,503
Istam-rustam (industry)	0,148	0,135	0,119	0,473	0,532	0,494

The analysis of the innovative potential of small businesses in the Navoi region shows that the potential for innovation activity is low, regardless of whether these enterprises operate in different areas. This indicates lack of resources and low level of innovation capacity structures.

Conclusions

In summary, it should be noted that the analysis of the values of innovation potential by separate groups contributes to the financial and economic performance of the Navoi region in the formation of innovative potential of small businesses. In the second place is the production-related indicators of innovation potential, while the lowest value belongs to the scientific and technical group.

From the results, we conclude that businesses can increase the performance of employees and scientific and technical teams that create innovative potential, thereby increasing their innovation capacity and achieving sustainable economic growth.

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