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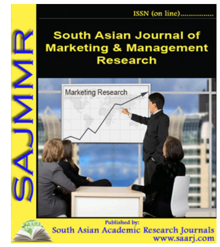

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OPTIMIZATION OF THE ACTIVITIES OF TOURISM ENTERPRISES

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ABSTRACT

The article considers a model for optimizing the production of a tourist enterprise in the republic and considers the profitability of an enterprise in a market economy. To do this, they are divided into deep, comprehensive, basic and additional, significant and insignificant, explicit and implicit. It then examines, first and foremost, the impact of important, fundamental, and defining factors that affect the production process. The responsibility of business entities for the functioning of a market economy and the existence of competition determines the need to compare results and costs, analyze events and indicators of general economic processes.

KEYWORDS: *Tourist Enterprise, Labor, Mathematical Methods, Production, Optimization Model, Firm, Profit.*

INTRODUCTION

Mathematical methods complement them well, without negating the simple traditional methods, and help to further develop them and to analyze the results of objective variables in a certain way through other indicators. One of the advantages of mathematical methods and electronic technologies in the management of the national economy is that they can show the effect of factors on the modeled object, the relationship between the outcome indicator and the resources. It allows you to scientifically predict and manage production results in dozens of industries and thousands of enterprises and the priorities of the national economy.

The theoretical and practical significance of mathematical methods and models can be seen in the following:

1. Mathematical methods and models serve as a leading tool in the development of economics and natural sciences.
2. Some corrections can be made in predictions using mathematical methods and models.
3. With the help of economic-mathematical models it is possible not only to analyze economic processes in depth, but also to discover their new unexplored laws. They can also be used to predict the future development of the economy.
4. Economic-mathematical methods and models, along with the simplification of computerization and automation of computational work, facilitate mental labor, help to organize and manage the work of management and economic personnel on a scientific basis.

Economic-mathematical methods is the name of a complex of economic and mathematical sciences. These disciplines are used to analyze the whole economy using comprehensive mathematics. Economic-mathematical methods and models include concepts and rules consisting of a system of specialized disciplines, including:

a) study of the impact of objective and subjective factors on economic processes, their relationship;

b) scientific substantiation of business plans and objective assessment of their implementation;

v) identification of positive and negative factors affecting the economy and quantitative assessment of their impact;

g) identification and disclosure of production development trends and ratios, unused domestic energy reserves;

d) generalization of best practices, optimal management decisions.

In the analysis of economics using mathematical methods and models, production processes are studied in a complementary manner. Explores and evaluates all the factors, causes, grounds, events and processes that connect them. To do this, they are divided into deep, comprehensive, basic and additional, significant and insignificant, explicit and implicit. It then examines, first and foremost, the impact of important, fundamental, and defining factors that affect the production process. It is very difficult to study the impact of all factors on economic processes and in practice it is not always necessary to take them into account.

The need to identify the factors that effectively affect the implementation of the business plan of the enterprise, to study their impact, as well as the need for quantitative and economic analysis of these effects - requires the use of mathematical models.

The subject of economic-mathematical methods and models is the study of production processes in consumers, producers, associations, unions, socio-economic efficiency under the influence of objective and subjective factors and the financial results of their activities. expression based on a system of mathematical models. The subject of economic-mathematical methods and models is the process of production under the influence of internal and external factors, the formation of final results and their evaluation on the basis of mathematical methods. Different factors routinely affect the production process and they represent different economic laws. For example, the effect of the price factor on the modeling process is studied. If the prices of raw materials, semi-finished and finished products change in the economy, in the market, it will affect all financial indicators of industry, agriculture, trade and other enterprises.

Tasks of economic-mathematical methods and models in economic analysis:

1. scientific and economic substantiation of business plans and standards of the enterprise;
2. objective and comprehensive study of the implementation of business plans and compliance with standards;
3. determining the economic efficiency of the use of labor, material and financial resources;
4. control over compliance with the requirements of commercial accounting;
5. search and evaluation of internal opportunities, identification of trends and ratios of production development;
6. Generalization of best practices, review of administrative decisions.

The above tasks show that the production situation is multifaceted and variable and can change. Practice shows that models of market economy analysis can pose new challenges to science, as economic and social processes grow and change rapidly.

Extensive use of economic-mathematical methods and models improves the direction of economic analysis, increases the efficiency of economic analysis, provides opportunities for quantitative assessment of changes between different processes and identification of change trends. As a result, with the reduction of analysis time, it is necessary to fully cover the factors affecting economic and commercial activity and separate the most important ones from the previous ones, replacing the previous estimates with the exact ones. ability to create and solve complex manual calculations on computers.

The use of economic-mathematical methods in the analysis of the activities of enterprises requires a systematic approach to the study of the economy of the enterprise, taking into account all the existing interrelationships between its various activities.

The analysis of such conditions requires a systematic approach from the point of view of cybernetics: the creation of a set of economic-mathematical models that represent the quantitative characteristics of the problem and economic processes to be solved using economic analysis; improving the system of economic information on the activities of the enterprise; availability of technical means for collection, processing, storage and delivery of targeted economic data for economic analysis; requires the formation of special analytical groups consisting of economists-practitioners, mathematicians-accountants on economic-mathematical modeling, operator-programmers. Mathematical problems created for the purpose of economic analysis can be solved using one of the economic-mathematical methods presented in the following scheme.

Primary mathematical methods are used to justify the need for different resources, to calculate production costs, to make plans, and to calculate balances.

The classical methods of higher mathematics are applied not only in other methods (mathematical statistics and mathematical programming), but also in their own way. This is because differential and integral methods are widely used in factor analysis of many economic indicators.

The formation of a market economy in Uzbekistan requires the replacement of economic accounting with trade. The responsibility of business entities for the functioning of a market economy and the existence of competition determines the need to compare results and costs, analyze events and indicators of general economic processes. It is therefore important to learn and apply new methods of analysis.

Extensive use of mathematical methods is an important area of improvement in economic analysis, which increases the efficiency of the analysis of the firm, enterprise and its divisions. This allows you to reduce the analysis time, take into account all the factors, perform error-free calculations. In addition, these methods allow you to find optimal solutions (solutions) on several criteria.

In particular, the manufacturer's behavioral model is based on maximizing profits. Such a criterion is not universal. Maximizing current profits depends on determining the company's prospects. In today's complex world, the main task is to keep the company as a unit of production, so the criteria for maximizing profits do not work, but the criteria for minimizing costs are accepted.

In a market economy, an enterprise (firm) seeks to make a profit or maximize production.

We will consider and apply the model of optimization of production activity of the tourist enterprise:

a) limited production capacity;

b) profit maximization criteria and the Kun-Takker method.

Assume that a manufacturing firm produces several different products with the same or permanent structure. This is the trademark of the firm.

For the production of a firm, the means of live labor L (number of annual workers or number of man-hours) are K (fixed assets) and packaged labor and labor are M (annual fuel used, raw materials, equipment, etc.).

Each type of gross resource (labor, capital, and materials) is divided into several types (different categories of labor, different equipment). Vector column $x=(x_1,x_2,\ldots,x_n)$ determine the resource consumption with. It describes the firm's technology with a production function that represents the consumption of resources and the availability of a quantity of product:[1]:

$$X = F(x) \qquad (1)$$

$F(x)$ is considered to be a continuous, neoclassical function, two differentials of which can be found, and the matrix of its second product is negative.

The price of a product p and j, unit cost of resources - $w=\overline{1,n}$ then the cost vector is written as follows and the profit is obtained:

$$\Pi(x) = pF(x) - wx \qquad (2)$$

with: $w=(w_1,w_2,\ldots,w_n)$ - resource cost vector series.

The cost of resources is natural and clear, if x_j - the average annual number of skilled workers and w_j - annual salary per capita; if x_j - purchased materials (fuel, energy, etc.) if so w_j - the purchase price of this material.

a) If x_j - production funds , then w_j - the amount of the annual rent of the funds or the cost of repairing the funds.

b) in this $R = pX = p(Fx)$ - the firm's annual output or annual revenue $C = wx$ - production costs or annual consumption of resources.

If the amount of resources involved is not affected by other factors, the profit maximization is written as follows:

$$\max_{\{x\geq 0\}}\left[pF(x) - wx\right] \qquad (3)$$

This is a nonlinear programming problem , $x \geq 0$ to solve the problem Kun-Takker condition applies:

$$\begin{aligned} &\frac{\partial n}{\partial x} = p\frac{\partial F}{\partial x} - w \leq 0 \\ &\frac{\partial n}{\partial x}x = \left(p\frac{\partial F}{\partial x} - w\right)\cdot x = 0 \end{aligned} \qquad (4)$$

If resources are used in the optimal solution $x^* > 0$, then (4) the condition is written as follows:

$$p\frac{\partial F(x^*)}{\partial x} = w \qquad (5)$$

yoki $p\frac{\partial F(x^*)}{\partial x_j} = w_j, \quad j = 1,2,\ldots,n$

At the optimal point, the final product corresponding to the resource unit is equal to the price.

v) Maximizing the amount of product without changing production costs is written as follows:

$$\begin{aligned} &\max F(x) \\ &wx \leq C, \quad x \geq 0 \end{aligned} \qquad (6)$$

This problem is a problem of variables with a linear limit of nonlinear programming. After the theory, we construct the Lagrange function:

$$L(x,\lambda) = F(x) + \lambda(C - wx)$$

Then we find the maximum value without the negative variables. To do this, we fulfill the Kun-Takker condition[2].

$$\frac{\partial F}{\partial x} - \lambda w \leq 0$$

$$\left\{\frac{\partial F}{\partial x} - \lambda w\right\}\cdot x = 0 \qquad (7)$$

$$x \geq 0$$

Apparently (7) condition (4) complies with the condition. If

$\lambda = 1/p$

Based on the Kobb-Douglas function, we consider the problem of maximizing the profits of a firm that produces the same product using the following example.

Example. The company has allocated 150,000 soums for rent and wages if any maximize product quantity (rent per unit of securities $w_K = 50000$, salary $w_L = 100000$)

$$X = F(K,L) = 3 \cdot K^{2/3} \cdot L^{1/3}$$

If so, find the limit of the last exchange of funds and labor at the optimal point?

Solution. As you know, $F(0,L) = F(K,0)$, hence the optimal solution $K^* > 0$, $L^* > 0$. That is why (7) the condition is as follows:

$$\begin{cases} \dfrac{\partial F}{\partial K} = \lambda w_K \\ \dfrac{\partial F}{\partial L} = \lambda w_L \end{cases} \qquad (8)$$

or in our example

$$\frac{2}{3} \cdot \frac{F(K^*, L^*)}{K^*} = \lambda w_K$$

$$\frac{1}{3} \cdot \frac{F(K^*, L^*)}{L^*} = \lambda w_L$$

Divide the first equation by the second and find:

$$\frac{2L^*}{K^*} = \frac{w_K}{w_L}$$

Put it on this condition $w_K K^* + w_L L^* = 150$, we find:

$$K^* = \frac{2}{3} \cdot \frac{150}{w_K} = 20, \qquad L^* = 5$$

The solution can be expressed geometrically. The isocosta line in Fig.1 (S=50,100,150 cost line defined for) and isoquants (constant X=25,2; 37,8 gross product line).

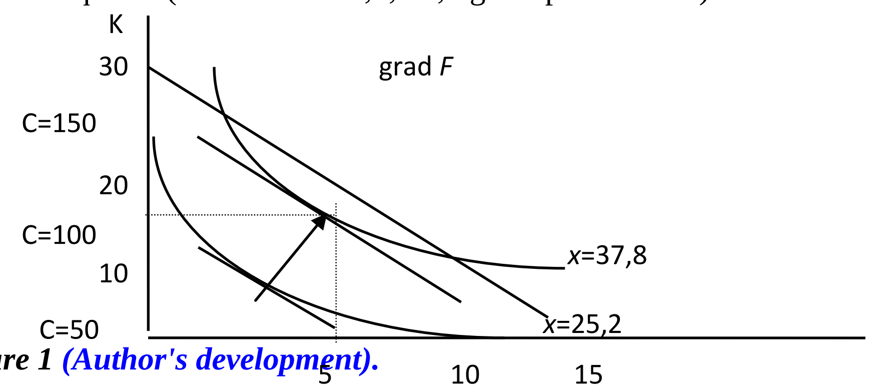

***Figure 1** (Author's development).*

Isocosts are written by the following equation:

$$5K + 10L = C = const$$

Isoquants are explained by the following equations:

$$3K^{2/3}L^{1/3} = X = const$$

At the optimal point $K^* = 20$, $L^* = 5$ isoquant $X^* = 37{,}8$ and isocosta $C = 150$, their gradients $\left(\frac{\partial F}{\partial K}, \frac{\partial F}{\partial L}\right)$, (w_K, w_L) collinears.

Optimal score stock and labor exchange:

$$S_K = \frac{\partial F / \partial L}{\partial F / \partial K} = \frac{1 - L \cdot K^*}{\alpha \cdot L^*} = \frac{1}{2} \cdot \frac{20}{5} = 2$$

This means that one worker can be replaced by two unit funds. Solve the problem of maximizing the company's profits, resource requirements $x^* > 0$ we find. The corresponding costs $C^* = wx^*$. Now we come to the part where we talk about the middle ground. The optimal solution in the above neoclassical production function $x^* > 0$ is the only solution[3].

So, on the one hand:

$$\frac{\partial F(x^*)}{\partial x} = \frac{1}{p} w, \qquad wx^* = C^*, \qquad n(x^*) \geq n(\bar{x}^*)$$

on the other hand:

$$\frac{\partial F(\bar{x}^*)}{\partial x} = \lambda w, \qquad w\bar{x}^* = C^*, \qquad F(\bar{x}^*) \geq F(x^*)$$

Because

$n(*) = pF(x^*) - wx^* \geq pF(\bar{x}^*) - w\tilde{x}^* = n(\bar{x}^*)$ va $wx^* = w\tilde{x}^* = C^*$, $F(x^*) \geq F(\tilde{x}^*)$

$F(\tilde{x}^*) \geq F(x^*)$, that is why $F(\tilde{x}^*) = F(x^*)$

the solution to the problem is unique , so $\tilde{x}^* = x^*$.

As long as you have a unique solution to the problem of maximizing profits, $x^* > 0$ and costs are given accordingly $C^* = wx^*$ in order to maximize the amount of product in the case.

CONCLUSION

Economic-mathematical methods do not negate traditional methods. This will help them to further develop and analyze performance in the context of objective variables through other indicators. The importance and advantages of mathematical methods and models are: they make rational use of material, labor, and monetary resources; serves as a leading tool in the development of economics and natural sciences; it will be possible to make some adjustments during the preparation and implementation of forecasts; economic processes are not only analyzed in depth, but also their unexplored new laws and trends are revealed; Promotes mechanization and automation of computational work, mental labor.

LIST OF REFERENCES

1. Z a m k o v O. O., Ch ye r ye m n i x Yu. A., T o l s t o p ya t ye n k o A. V. Matematicheskiye metodi v ekonomike. M .: Delo i servis, 1995. - 268 p.

2. K o l ye m a ye v V. A. Matematicheskaya ekonomika. M .: Uniti, 2005. - 28

3. K r ye m ye r N. Sh. Theory of probabilities and mathematical statistics. M .: Uniti, 2000. P. 100–140.

4. Safa ye v a K., B ye k n a z a r o v K. Mathematical methods in the investigation of operations. Tashkent: Teacher, 1984. - 186 pages.

5. P h i l i p s J. Little Business in American Economy. Urbana, 1958.

6. X o s k i n g A. Course predprinimatelstva. M .: Nauka, 1993. - 28 p.

7. X o d i ye v B. Yu. Econometric modeling of business development in the Uzbek economy: iq. fan. doc. disc. Tashkent: TDIU, 2000. - 338 pages.

8. Sh o d i ye v T. Sh. Problems of modeling the development of rural economy (at the beginning of Uzbekistan): Dis. … Ph.D. econ. science. Tashkent: TINX, 1988. - 380 p

Web sites and addresses of the Internet

1. http://www.cer.uz - Analytical review "Economy of Uzbekistan".

2. http://www.tseu.uz - TDIU website.

3. http: //www.vopreco.ru - the site of the magazine "Questions of Economics".

4. http: //www.jsae_cemi.rssi.ru - the site of the magazine "Obshestvo i ekonomika".

5. http: vopstat_mtv-net.ru. - Website of the magazine "Statistics".

6. http://worldbank.org - World Bank website.

7. http://www.libertarium.ru - Works and articles of modern Western and Russian scientists on economic theory and economic policy.

8. http://www.iet.ru - Website of the Institute of Transition Economics.

9. http://www.undp.uz - Analytical recommendation.

10. http://www.hse.ru - Website of the Higher School of Economics (Russia).