MODELING BASIS OF THE DEVELOPMENT OF PUBLIC SERVICE INDUSTRIES

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Annotatsiya. The article describes the modeling foundations of the development of public service sectors, the organizational and economic mechanisms of innovative development, which are one of the current topical issues, and the opinions of a number of scientists aimed at improving it. The structure of territorial specialization of public service is shown. The dependence of the development of public service on natural resources, the schedule of mutual energy supply of public service sectors, the improvement of living standards, the development of new innovations in the development of public service sectors, the introduction of new jobs, and the connection of light industry with telecommunications and information technologies (ICT) are highlighted, and conclusions and proposals are made on this.

Keywords: service provision, standard of living, innovative prospectors, transport infrastructure, energy infrastructure, communication infrastructure, foreign investors, technology transfer, reactors, market coverage, geographical scope, vertical area, organizational and economic mechanism, automated systems, digital management, modern technologies.

Introduction. In most developing or developing countries, three-quarters of the population is dependent on agriculture. In developed countries, this figure is only 10 percent of the total working-age population. Even in countries that are not in the top 20 and have not fully exploited this sector, at least 50 percent of the population is employed in the service sector. Especially in countries where the profit from services accounts for 3/4 of GDP, the share of the “service economy” in relation to GDP is high. This share has reached, in particular, 85 percent in Luxembourg, 87 percent in France, 86 percent in the United States, 85 percent in Belgium, 83 percent in England, as well as 94 percent in some countries of Southeast Asia, including Hong Kong, and 91 percent in Singapore. In countries with a high level of service provision, as a rule, services based on finance, credit, surety, guarantee, insurance, education, tourism, medicine,

communication and information, innovative and nanotechnology are developed. In countries such as Spain, Italy and France, the basis of GDP is services in the tourism sector. A number of US companies earn at least more than 50% of their income from production through the sale of services related to production[1].

For developing countries, the development of the service sector is one of the effective ways to improve the living standards of the population. The main issue is not only to increase the share of the service sector in GDP, but also to expand its composition, increase employment, and develop modern forms and technologies of service provision that fully meet the needs of the population.

This study has extensively studied the problems associated with modeling the development of service sectors for the population.

Theories of econometric modeling of the development of service sectors for the population form the directions of state management in the socio-economic development of regions. However, one cannot be limited to their study alone, since they largely rely on theories of economic growth of regions. It is necessary to search for and introduce new approaches, models and methods for the development of service sectors for the population.

The role of the service sector in the current conditions is determined by the following factors:

new jobs are constantly being created in the sector;

the sector is increasing its contribution to the country's gross domestic product;

the sector is reducing the time spent on household services, which improves the quality of life of the population.

Econometric methods do not deny simple, traditional methods, but rather help to further develop them and analyze objectively variable performance indicators through other indicators.

In econometric modeling of the development of service industries, in describing management processes, the real object is presented in the form of two systems: the manager and the managed (management object).

The general structure of management systems in econometric modeling of a multi-sector service industry is presented in Figure 1. It includes endogenous variables: $\vec{x}(t)$ – input effects (task) vector; $\vec{\upsilon}(t)$ – vector of external environmental influences; $\vec{h}'(t)$ – error signal vector; $\vec{h}''(t)$ – vector of control

effects; exogenous variables: $\vec{z}(t)$ – S is the system state vector; $\vec{y}(t)$ – a vector of output variables, usually $\vec{y}(t) = \vec{z}(t)$ will be.

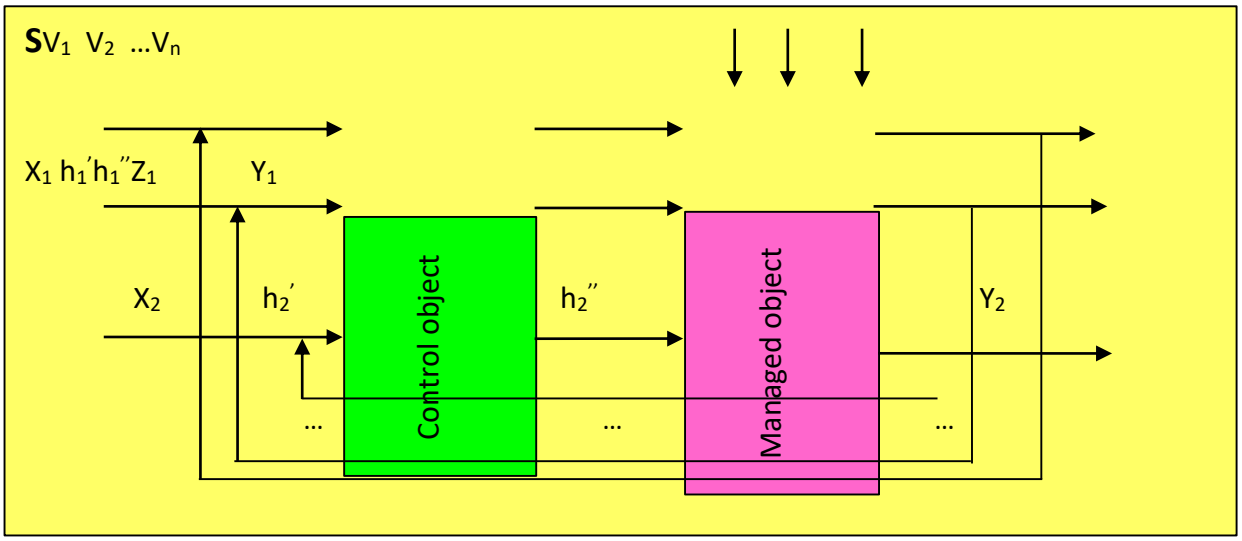

Figure 1. Structure of the management system in econometric modeling of service industry development[2]

In the current state, the econometric modeling control system is a set of software and hardware tools that provide a specific target control system. Depending on how well the control object achieves the target, a decision can be made on the state coordinate *y(t)* for a one-dimensional system. The task value of the law of change of the control quantity $y_{zad}(t)$ and the difference between the actual value *y(t) h'(t) = $y_{zad}(t)$ — y(t)* is considered a control error. If the law of change of the given control quantity coincides with the law of change of the input effect (task), i.e. $x(t)=y_{zad}(t)$ if so, then h'(t)=x(t)-y(t) will be.

A system in which the control error h'(t)=0 at all times is called an ideal system. In practice, it is impossible to develop ideal systems. Therefore, the error in automatic control should be reduced based on the principle of negative feedback (using the output variable y(t) and its setpoint values as information about the deviation between them).

In econometric modeling, the task of control systems is to change the variable y(t) according to the law with a given accuracy (with a permissible error). When designing and operating automatic control systems, it is necessary to select parameters of the system S that can provide the required control accuracy, as well as stability in the transition process.

If the system is stable, then its behavior over time, the maximum deviation of the control variable y(t) in the transient process, the time of the transient process, etc. are of practical interest. The properties of automatic control systems of different classes can be concluded from the types of differential equations that most closely describe the processes in the system. The order of the differential equation and the values of the coefficients fully determine the static and dynamic parameters of the system.

The use of Figure 1 allows for the formulation of the process of continuous-deterministic S-systems and the assessment of their main characteristics, the adoption of analytical or simulation approaches developed in the form of a language suitable for modeling continuous systems or using analog and hybrid computing tools.

The importance of econometric modeling of public service networks is manifested in the following:

rational use of material, labor and monetary resources;

serves as a leading tool in the analysis of economic and natural processes;

makes it possible to make some adjustments when forecasting the development of public service networks;

makes it possible not only to conduct a deep analysis of service networks, but also to discover their new unexplored patterns. They also make it possible to predict the future development of service networks;

along with the automation of computational work, it facilitates mental labor, and creates the opportunity to organize and manage the work of service employees on a scientific basis.

The service industries operating in our republic are improving their equipment and technology, trying to meet the growing demands of consumers.

Previously, it was believed that the service sector would complement the material production sector. The quality of service was low, and it did not satisfy consumers and did not meet their needs.

In the current market conditions, service enterprises and organizations operating in our republic are required to provide offers that meet international standards. They must provide consumers with timely, convenient and safe services.

In such conditions, econometric modeling of the development of service industries is of particular importance:

Because in market conditions:

firstly, there are elements of risk and uncertainty;

secondly, resources are limited;

thirdly, there is competition between producers and consumers;

fourthly, the ability to predict the future state of economic indicators, etc.

Service industries are diverse and differ from each other in certain characteristics.

Since service networks are complex process networks, their viability depends on how well they fit the object being modeled.

Since it is difficult to reflect all aspects of an object in one model, only the most characteristic and important features of the object are reflected in it. It should also be noted that an overly simplified model cannot meet the requirements. An overly complex model creates difficulties in the process of solving the problem.

The main block in each modeling process is the “goal”, since, depending on the goal, different models can be created for one object. As an object, we take the main service sectors of the Kashkadarya region.

It is necessary to use new technologies and new methods to develop service sectors in the region and reduce the shortage of gas, water and electricity in the regions. In order to increase the production potential of the regions, it is necessary to introduce modern technologies, develop entrepreneurship and business, achieve self-sufficiency and social equality.

In this study, an integrated simulation model was improved through a systematic analysis of the public service sector. This occupies a unique place in the methodology of targeted and strategic decision-making for the development of public service sectors and the structure of modern systematic research.

To determine the level of coverage of the region's population with service networks, we use the following formula::

$$Ax_d = \frac{\sum_{i=1}^{n}(Y_i)}{\sum_{j=1}^{m} A_j} = \frac{Y_1+Y_2+\cdots+Y_n}{A_1+A_2+\cdots+A_m} \qquad (1.1.1)$$

Here: Ax_d– The level of provision of the population with all types of services; A_j–j population in the area; Y_i–i type of service industry.

Based on the above considerations, the factors influencing the increase in the efficiency of providing services to the population can be grouped as follows:

Socio-demographic: covers the system formed by the location of the population, gender, age, and family status;

Socio-professional: is associated with the industrialization of production, the system of personnel training and career guidance, that is, education, specialty classification, seniority, and professional development;

Socio-domestic: is associated with the improvement of living standards and housing conditions, cultural and household services, solving problems related to transport, the organization of public catering and medical services, the presence of preschool institutions, people's recreation and productive organization of free time;

Socio-psychological: reflects the socio-psychological state of the labor team in the enterprise, in the group, satisfaction with work, the development of mutual assistance and friendly relations, the organization of a healthy spiritual state;

social - production-related: covers the organization of labor, participation in competition, the system of remuneration for labor, payment according to the work performed, and labor discipline;

social - economic: this includes the level of wages, per capita income.

Such a grouping of social factors affecting the development of service industries allows you to fully use management in the growth of development.

In conclusion, social factors significantly affect the development of service industries. At the present stage, the full use of the system of all social factors for the development of service industries is considered an objective necessity for the development of the industry.

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