

METHODS FOR ASSESSING QUALITY AND EFFICIENCY IN THE FIELD OF SERVICE

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Abstract: The system of indicators that reflect the composition of the characteristics of the quality of services in service enterprises is based on functional indicators, safety indicators, reliability indicators and indicators of professional level of employees. Quality of services is a set of services that determine the satisfaction of the identified or intended needs of the consumer. The cost-effectiveness assessment method of innovation based on cost-benefit comparison in the service sector has been improved on the basis of indicators reflecting integrated economic efficiency, profitability of innovation activity, cost-effectiveness of innovation.

Keywords: quality, efficiency, service, quality of service, indicators of quality, methods of evaluation, efficiency of innovation, profitability of innovative activity.

At present, low-quality service enterprises do not have a strong competitive advantage compared to their firms. It is considered a necessary condition for entrepreneurial activity. There will be no future for the production of poor quality products and services.

The process of determining and evaluating the quality of services is much more complex than evaluating the quality of goods. Assessing the quality of services is more complicated, due to the lack of quantitative measurement parameters such as performance, functional characteristics, repair cost, due to its imperceptible nature.

The inseparability of the process of service and consumption means that the quality of services is determined on the basis of these two processes: the provision of services and the perception of results by consumers in practice. Also, the quality of services is often based on the relationship between the employee and the consumer, depending on the professional training of the employee, his personal characteristics and mood. The following five features of service evaluation can be highlighted:

The first feature is that the object of assessment of the competitiveness of services is the activities of service enterprises.

Since the object of activity of enterprises providing intangible services is a person as an exception.

A third feature of service evaluation is related to the assessment of service conditions and quality.

The fourth feature is related to the application of custom-looking standards. The need to establish a sequence of requirements for service quality has led to the introduction into life of two specific types of standards: standards in the enterprise and standards for personnel.

The fifth feature is related to the one-time feature of a number of intangible services.

In our opinion, the most important parameters for assessing the quality of services are:

1. Level of popularity - timely (consumer-friendly) access to services.
2. Reputation of the enterprise (firm) - characterizes the trust of the buyer in the service enterprise (firm).
3. Reliability - the ability to provide services in a timely manner.
4. Security - the absence of uncertainty and risk on the part of the buyer (e.g. ensuring that the load is maintained in a quantitative distribution).
5. Personnel competence - the availability of the necessary knowledge and skills in employees to provide high quality services.
6. Level of communication - the extent to which the company has conveyed the essence of their services to the consumer.
7. Politeness - the desire to help the customer and to provide the available service (kindness, courtesy of the employee).
8. Consensus with the customer - a sincere interest and support to the customer, the ability to put himself in the shoes of the customer, an individual approach.
9. Sensitivity - the natural environment (interior, appearance of equipment, appearance of the employee) that provides services in accordance with their quality.

A.Parasuraman, V.Zeytaml and L.Beri have developed an interval model of service quality, which reflects the main requirements for the expected quality of services. This model highlights five differences in the service process that are reasons why customers are dissatisfied with the service. That is:

1. The difference between customer expectations and the perception of that expectation by company executives. This gap (difference) arises from the fact that managers do not even have an idea of how consumers will evaluate the high quality of services.

2. The difference between the perception of consumer expectations by managers and its consideration as services. This difference is common in practice. Consumer expectations can be misinterpreted due to the complexity of identifying certain aspects that consumers prefer and because the management of the enterprise does not come to a clear conclusion about it.

3. The difference between the quality of services and the quality of delivery. This discrepancy can occur in the repair of many factors. Sometimes managers do not fit the expectations of guests in practice, although the expectations of consumers and the nature of services are theoretically accurately expressed.

4. The difference between the services provided and the external media involved in providing consumers with information about the services they purchase. This difference stems from the discrepancy between the consumers' information about the company's range and quality of services through information sources and the quality and range of services the company actually offers.

5. The difference between what consumers expect and how they feel about the services provided. This occurs when any of the above four differences are present. From this, it becomes clear to service providers why it is difficult to ensure the quality expected by the customer.

These models do not take into account the following two important factors, namely:

The need to identify a group of potential consumers of services. Searching for specific aspects of services does not eliminate any of the above differences, while consumer research establishes interpersonal communication and serves as an important tool for understanding customer preferences;

Goods and services are often elements of a common value-distributing network. Therefore, the question of how to form a group of potential customers and how to assess their expectations becomes a necessity.

In our opinion, the indicators that represent the quality of services in service enterprises consist of functional indicators, safety indicators, performance indicators and professional level of employees (Figure 1).

The main directions of determining the composition and structure of the described properties are reflected in the indicators used in assessing the level of product quality.

By definition, they can be in natural units (kilograms, meters, points) as well as in units of value.

Absolute and relative indicators of quality assessment.

– Predicted, design, production, operational indicators according to the stage of identification.

Depending on the characteristics described, they can be individual and complex (group, generalized, integral).

Individual and complex indicators of quality can be grouped into different groups according to the relationship of the object (system) with the external environment. When analyzing this group of indicators, a certain correlation between them can be observed. For example, the technological level of production, the energy capacity of the product is inextricably linked with a group of economic and environmental indicators.

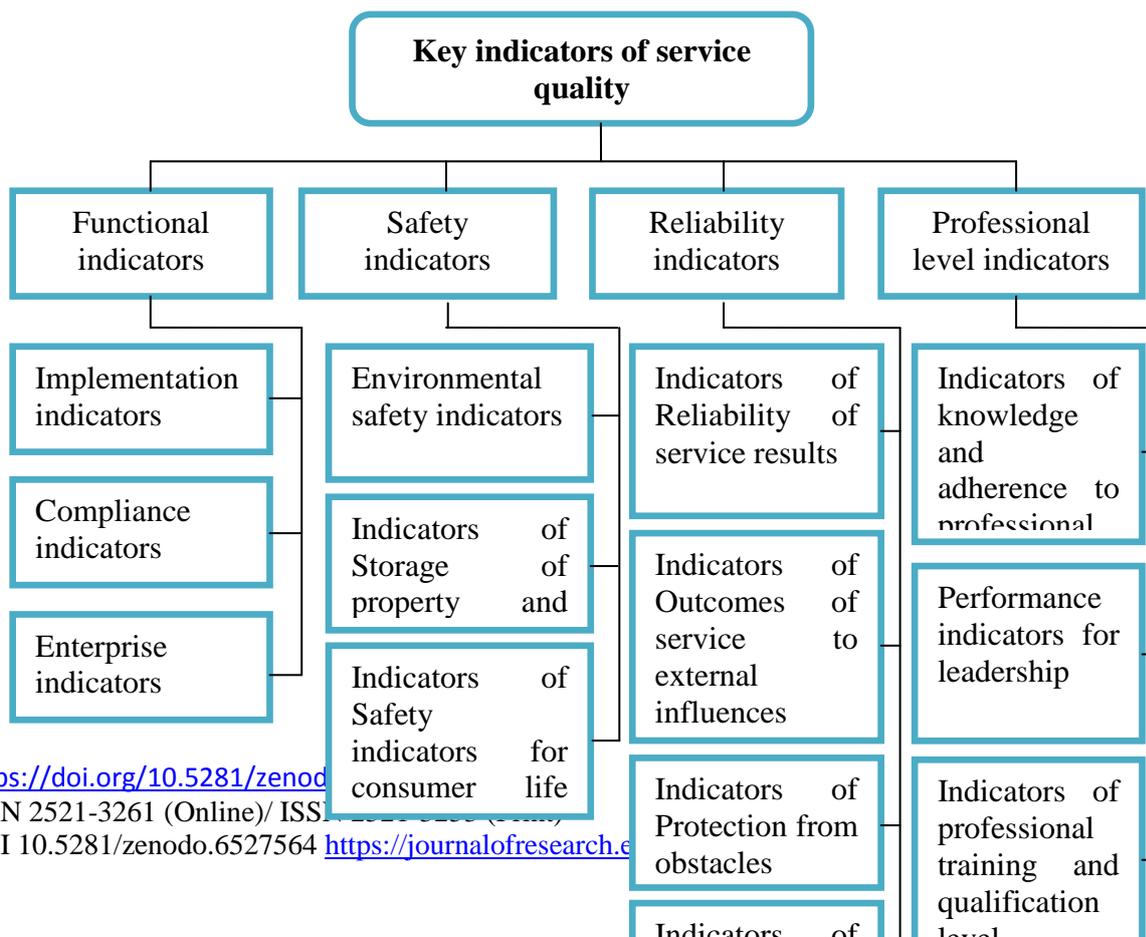


Figure 1. Indicators of service quality in the service sector

The quality of a product is evaluated in quantitative indicators that serve to measure its properties. Modern science and practice have developed a system of quantitative indicators of product quality assessment, which are also indicators of quality.

The most common description of the characteristics of goods and services is made on the following groups, which correspond to the quality indicators: performance indicators of the goods; reliability indicators; technological level indicators; indicators of standardization and unification; ergonomic performance; aesthetic indicators; transportability indicators; indicators of legal protection; environmental indicators; safety indicators.

Reliability indicators. Reliability is one of the most important indicators of an industrial product. The complexity and duration of the production of various products and the level of responsibility for the functions performed are increasing day by day. The more responsibilities a function requires, the greater the need for reliability. Insufficient level of reliability in machines and devices requires so much cost to repair them and maintain their level of suitability.

The reliability of products often depends on their operating conditions (temperature, humidity, mechanical load, pressure, radiation, etc.).

Reliability – is the ability of an object to maintain and perform all its functions for a specified period of time under specified conditions, conditions of use, maintenance, repair, storage and transportation.

Indicators of technological level are characterized by mass production of products, rational distribution of labor resources, raw materials and materials, saving time, reflecting high labor efficiency in the production of products and effective design and technological solutions.

Indicators of standardization and unification (unification) – is that the product is provided with a standard, unified with the most important elements, as well as differs from other products by its simplicity. All details of the product are divided into standard, unified and genuine types. The higher the share of standard and unified details, the better the product is made and the better the quality for the consumer.

Ergonomic indicators are used to determine an object's compliance with ergonomic requirements, such as size, shape, color, and relative position.

Transportability indicators are the ease of direct transportation or consumption of the product.

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Legal protection indicators are explained by the fact that the product is protected and patented. In determining this indicator, it is taken into account that the products are protected by new technical solutions, as well as patents in the country, country of manufacture or exporting country, registered as an industrial design and trademark.

Indicators of legal protection of industrial products are assessed by two indicators: patent protection (or patentability) and patent purity.

Environmental indicators are characterized by the degree of harmful impact on the environment when consuming or exploiting a product (service).

Safety indicators are protection of people or service personnel from the use or operation of the product, its repair, installation, storage, transportation, electrical, mechanical, thermal effects, explosion, formation of toxic and explosive gases, acoustic noise, radioactive radiation.

Safety indicators are reflected in the use of measures and means of protection of people in the event of a disaster, measures against unauthorized compliance with the rules of operation.

Methods of assessing the quality of services based on the measurement of consumer demand today can be divided into two groups according to the criteria used to measure the approach: knowing the opinion of consumers and evaluating the results of analytical analysis.

Knowing consumer opinion means that respondents are invited to independently assess the importance of services in different descriptions. These methods include subjective assessment of service quality:

- identify a list of the most important features of the services;
 - rating of the level of importance of the description of services in this or that description;
 - rating method;
 - distribution of points (Constant sum);
 - Q-sort;
 - double relationship method.

Now let's focus on classifying the methods of evaluating the quality of services as well as evaluating their effectiveness. Because the increase in the quality of services ensures the competitive advantage and efficiency of the enterprise.

If we focus on theoretical approaches and scientific views on the interpretation of the essence of the effectiveness of the study, it can be concluded from the analyzed literature that quantitative approaches to assess the category of efficiency in the development of economics have expanded significantly. In our view, they are all classified into the following two approaches, which differ from each other in terms of common features: resource-cost and goal-oriented approaches. We will take a closer look at the essence of these approaches.

In the more common resource-cost approach, performance appraisals are defined by performance indicators. In the resource-cost approach, productivity and efficiency indicators are interpreted in the same sense. But as an economic category, the essence of these categories has a different description.

The difference between productivity and efficiency indicators is that while productivity represents the scale of production as an economic category, efficiency is a category of reproduction that represents the stages of distribution, exchange and consumption of a product.

In the concept of productivity, this system of indicators is based on the theory of elements (factors) of production. According to this concept, the main goal of productivity is to achieve high results at low cost. Accordingly, the general formula for determining productivity is as follows.

$$U = \frac{ICH}{S}, (1)$$

where: U - fertility; ICH - product production capacity; S - costs.

In the assessment of the above indicator (1) we can distinguish three types of productivity that differ from each other: specific, general and multifactorial and gross productivity indicators of production factors.

Specific productivity indicator is an indicator that represents the ratio of a resource used as a factor of production (service) to the end result. This indicator indicates a one-factor efficiency of production (service).

An overall performance indicator is an indicator that represents the ratio of a number of resources to the end result as factors of production. This indicator determines the efficiency of production (service) factors.

Aggregate productivity indicator is an indicator that represents the ratio of total resources used as a factor of production (services) to the total end result, and indicates the efficiency of the gross output.

It should be noted that the indicators are accepted as gross, gross and private productivity, and can be used at all levels of production (services), ie within the sector, industry or individual enterprise (firm).

In addition to the generally accepted classification mentioned above in the economic literature, several other classifications can be distinguished. For example, for the degree of full calculation of costs and results, the classification of performance indicators can also be divided into three types: a) private (ratio of one result to one expenditure); b) generalized (ratio of one or more results to several expenditures); c) integral (full productivity report).

In the early twentieth century, American economists studied productivity and efficiency as the same indicators, and they did not deny the goal-oriented approach. They proposed the organization of production (services) on a scientific basis to achieve the intended purpose with the efficient use of resources. According to the goal-oriented approach, efficiency is evaluated as the ratio of the results obtained in the implementation of any process in production and the achievement of the desired result.

Another method of calculating efficiency is done as a ratio of the amount of resources required to use the minimum required resources (required to manufacture the intended product). The general formula for evaluating the efficiency of this tariff is as follows:

$$C = \frac{N_b}{N_m}, (2);$$

where: N_b is the result to be given; N_m is the target result.

Under the goal-oriented approach, the following aspects of efficiency can be classified:

– external efficiency, (efficiency of use based on the external capacity of the enterprise), the calculation of this indicator is expressed as the ratio of the planned results to the results achieved through the implementation of any process;

internal efficiency, (efficiency of use based on the internal capacity of the enterprise) the calculation of this indicator is determined by the ratio of the plan aimed at the use of the required resources to a minimum;

– total efficiency indicator, (calculated on external and internal efficiency indicators):

In our view, it can be concluded from the above considerations that the goal-oriented approach in assessing efficiency has some differences from the resource-cost approach. In general, the differences in the comparison of the above approaches are presented in the following table (Table 1).

Thus, performance appraisal in the service sector requires an integrated approach, and it represents the need for a balance of economic performance. This situation is gaining popularity and development in the world experience, and this, in turn, is becoming increasingly important.

Table 1

Comparing efficiency in the context of resource-cost and goal-oriented approaches

Description of Indicators	Description of Indicators	Description of Indicators
Method of determining indicators	$C = \frac{\text{натижа}}{\text{сарф}}$	External efficiency $C = \frac{\text{хакикий натижа}}{\text{максалти натижа}}$ Internal efficiency $C = \frac{\text{максал сарфлари}}{\text{хакикий сарфлар}}$ Overall efficiency $C_u = C_i + C_t$
Significance level of indicators	Maximum	≥ 1
Interdependence of efficiency and productivity indicators	Indicators with the same meaning and essence	Indicators with different meanings and meanings
Evaluation description	Indicators in quantitative description	Indicators with quality description
Implementation area	Which was of economic importance	It has social, economic and socio-economic significance

At present, an important factor in the development of the service sector of the country is the application of innovation and innovative technologies in the service process, ensuring the competitiveness of the industry, creating the necessary conditions for innovative projects to develop advanced services.

Therefore, the selection of the most effective innovations to increase efficiency in the service sector requires, on the one hand, an increase in results in its implementation, on the other hand, a comparison of costs with the expected efficiency as a result of introducing other opportunities for innovation.

The method of evaluating the effectiveness of innovations based on the comparison of results with costs in the service sector involves making the right decision about the purposefulness of innovative activities.

Most often, the calculation of integrated economic efficiency consists of three groups: the integrated efficiency indicator, the innovation profitability indicator, and the cost recovery period indicators.

Here is the option to calculate a specific indicator for each group:

1. Integral efficiency assessment (I) is the amount of the difference between results and costs over a given period based on discounting. Calculations on this criterion are given in the following form:

$$I = \sum_{t=0}^T (N_t - Z_t) a_t, \quad (1)$$

where: T is the reporting year; N_t - t - result in the year; Z_t - t - expenditures on innovation per year; a_t is the discount rate.

2. Innovative profitability (Pi) represents the ratio of income to expenses for a given period. Profitability is determined as follows:

$$P_i = \sum_{t=0}^T Q_t a_t / \sum_{t=0}^T B_t a_t, \quad (2)$$

where: Q_t - t - income received in the period; B_t - t - the volume of investment in innovation in the period.

The profitability of innovation in service enterprises is directly related to the integrated efficiency. If the integrated effect is positive, the innovation profitability will be greater than a factor of 1.0 or vice versa. If the innovation profitability is less than a factor of 1.0, then the innovation project is not implemented (included) in the service process.

The amount of income from innovations for a given period and the amount of investment required for it is calculated as follows:

$$Q = \sum_{t=0}^T \frac{Q_t}{(1+a)^t}, \quad B = \sum_{t=0}^T \frac{B_t}{(1+a)^t}, \quad (3), (4)$$

3. The payback period (t) in an enterprise is an indicator in the form of information necessary to assess the effectiveness of innovation.

This means that the longer the payback period, the higher the risk. Innovation introduced in a given (short) period is self-sustaining, in a certain period of time there may be innovations called 'covering innovations' that have the potential to offset the outcome of previous innovations.

They cover the cost of innovation in the short term. It is during this period that the market, price, scientific and technical design and technology can change. In modern sectors of the economy, where the share of scientific, technical and experimental design and new technologies is high, this result is taken into account with significant accuracy.

If the risk in the operation of the service enterprise is high, then the payback period is an important indicator in the development and decision-making process in relation to innovation. In this case, the risk must compensate for itself in the short term. That is, it is necessary to implement the project quickly. Typically, the science capacity of this project will be low, but this does not mean that technological innovation is impossible. The payback period represents the ratio of the initial investment in innovation in discounting the average annual cash flow.

$$T = \frac{B}{Q}, \quad (5)$$

where: B - initial investment in innovation; Q is the discounting of average annual cash inflows.

However, in our opinion, this indicator is suitable for assessing the effectiveness of innovation on an incomplete scale. This is reflected in the fact that it has an impact on a wide range of agents in the creation and implementation of

innovations. Investors, developers, researchers, manufacturers of innovative products, project organizations and consumers are involved in the creation of innovations.

At the same time, the realization of technological innovations is the ultimate goal to achieve positive results compared to its analogues. Annual economic efficiency (S_y) from the introduction of new technological processes, mechanization and automation, labor and production (services) is calculated according to the following formula:

$$C_{\bar{u}} = (\partial_{n1} - \partial_{n2}) * M_2, \quad (6)$$

where: $dn1$ and $dn2$ - the share of costs per unit of product (service) produced with the help of technology during the base and reporting period; M_2 is the annual volume of production of goods (services) in natural units on the basis of new technologies in the reporting period.

The cost-effectiveness of innovation in the service sector is calculated on the following indicators: costs for the development of technological innovation; total costs of production (service) and its sale; proceeds from the sale of products (services) produced as a result of the introduction of technological innovation; profit from the sale of products (services) for the introduction of technological innovation; proceeds from the sale of products (services); value of intangible assets; value of fixed assets; net profit; average annual number of employees.

The above indicators show the construction of a system of interrelated multiplicative factors to perform a factor index analysis: costs per unit of sales of products (services); profit from the sale of products (services); net profit.

Cost-effectiveness of innovations: reduction of the cost of the product (service); increase the level of armament of labor with funds; increase labor productivity; increase in sales of products (services); increase the profitability of sales, production and other financial indicators.

As a final indicator, we present the cost per unit of sales to analyze the impact of the development of technological innovations on the cost of the product (service). The factor model of the impact of costs on the adoption of innovations per unit of sales volume is assessed as follows.

$$\frac{R}{T} = \frac{R_1}{T_1} \times \frac{R}{R_1} \times \frac{T_1}{T}, \quad (7)$$

where: R - production costs of sold products (services); T - revenue from the sale of all products (services); $X1$ - the cost of mastering innovations; $T1$ - revenue from the sale of products (services) produced on the basis of innovations.

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