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THE ANALYSIS OF SELECTED PERFORMANCE MANAGEMENT INDICATORS IN THE PUBLIC HEALTH SECTOR IN SERBIA

Abstract

The modern approach to measuring business performance is based on monitoring a set of Key Performance Indicators (KPIs) comprising financial, non-financial, and product or service quality performance. Non-financial and service quality performances are particularly significant for public health organizations operating in the non-profit sector, where profit is not the primary measure of success. To improve the quality of healthcare services and measure performance within the public health sector, various assessment models and mechanisms are utilized, including healthcare accreditation. Monitoring healthcare quality indicators, as well as evaluating patient and employee satisfaction, is conducted as a mandatory

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activity to enhance the quality of delivered healthcare services. The aim of this paper is to present the prevalence of healthcare accreditation and its impact on patient and employee satisfaction as selected performance management indicators in the public health sector. The research methodology involves a quantitative, secondary analysis of publicly available data based on accreditation records of healthcare institutions in the Republic of Serbia for the period 2011-2025, and a statistical analysis of patient and employee satisfaction data in public healthcare institutions in the city of Belgrade for the period 2011-2023. The results and conclusions may have practical significance for the healthcare system, enabling decision-makers to gain insight into the status and effects of accreditation based on concrete indicators of patient and employee satisfaction.

Key words: *performance management, healthcare accreditation, healthcare quality indicators, patient satisfaction, employee satisfaction.*

JEL classification: I11, M10, L15

Introduction

Performance measurement is directly linked to quality as a key element of the management strategy for achieving organizational business success [7, pp. 20-28]. Just as the traditional understanding of quality activities has evolved from the quality of the finished product in manufacturing industries to the quality of all products and services, functional activities, and processes, the approach to measuring organizational performance has likewise transitioned from a focus on accounting data toward an integrated approach to measuring both financial and non-financial performance indicators [11, p. 18].

Business operations in the public health sector can be observed within the context of the three E dimensions of business success, which refer to economy, efficiency, and effectiveness [21, pp. 79-86] as essential elements of sound management in achieving the goals defined by public policies, regulations, and laws [4]. In practice, this means that healthcare organizations allocated with budget funds are responsible for creating value for users in an economical and efficient manner, thereby being effective. Performance measurement

in the healthcare sector involves establishing a relationship between inputs and outputs [26, p. 26], in terms of assessing the level of mission fulfilment and the achievement of set objectives as the fundamental postulates of business operations [28, pp. 169-178].

1.1 Financial and Non-financial Performance Indicators in the Healthcare Sector

Financial performance in the healthcare sector is reflected in achieving optimal business results through the purposeful expenditure of available financial resources [38], while their monitoring, analysis, and reporting are governed by legal regulations for budget fund users. Non-financial performance indicators point to the level of business activity implementation in relation to the achievement of social goals, based on the principles of benevolence and humanity, and they are most often descriptive in nature [30, pp. 77-94]. In accordance with the principle of non-profitability, the measurement and assessment of business success in the healthcare sector depend on non-economic indicators, which are not exact and are more difficult to express, monitor, and compare. Non-profit success performance relates to the quality of service delivery, a high level of patient satisfaction, and the motivation of employees as partners in achieving better organizational performance [9, pp. 31-44].

Non-financial performance also includes professional success indicators, specifically the determination of the minimum acceptable level of staff expertise and the quality of their work, for the purpose of analysing and evaluating success from the perspective of professional needs and requirements [13]. These performances are analysed and assessed in relation to all types of services provided and fall under the jurisdiction of appropriate professional bodies and relevant scientific institutions.

1.2 Quality Performance in the Healthcare Sector

Information regarding the quality of healthcare is essential for health policy makers to gain insight into the performance effects of healthcare organizations, the impact on the population's health status,

and the assessment of financing effects and models, as well as for healthcare professionals themselves to verify the quality of their own work. The traditional or "clinical" concept of quality in the healthcare sector was based on the premise that the quality of service received by the patient depends, to the greatest extent, on the knowledge, skills, and dedication of healthcare workers. The modern concept of quality in healthcare assumes that everyone participates in the process of providing high-quality healthcare services, which indicates the adoption of the Total Quality Management (TQM) concept [6, pp. 1-28]. The fundamental elements of TQM in the healthcare sector include focusing on the patient, process analysis, teamwork, a systematic method for analysing quality problems, available data for identifying, analysing, and evaluating quality weaknesses, and the implementation of changes aimed at improvement.

Poor quality of healthcare can lead to unexpected health damage and fatal errors in service delivery to patients. To avoid such situations, it is necessary to continuously improve quality firstly by defining it, then by measuring it, and subsequently by implementing activities that will lead to improvement [37, pp. 315-338].

1.3 Mechanisms and Models for Healthcare Quality Assessment

To assess the quality of healthcare, Donabedian proposed using a set of three interrelated elements: structure, process, and outcome [10]. Structure consists of the environment, staff qualifications, and management systems; process is the activity of providing healthcare services; and outcome refers to the success of treatment [12, pp. 106-117]. This model was used as the basis for defining mechanisms and models for healthcare quality assessment in the Republic of Serbia.

Performance management mechanisms in the Republic of Serbia are divided into internal and external, depending on who initiates and implements them. Internal quality assessment mechanisms include peer review, medical audit, and patient satisfaction surveys [6, pp. 1-28]. External assessment mechanisms are conducted by independent experts, either at the invitation of the institution itself or at the initiative of external authorities, in relation to formulated and

published standards. Healthcare providers participate in the assessment process voluntarily, with the aim of improving their organization's operations and the delivery of healthcare services.

Four models of external assessment mechanisms are in use: accreditation of healthcare institutions, visitation, the application of ISO standards, and the EFQM excellence model [27, pp. 315-338]. The Law on Healthcare specifies that the responsibility for creating policies to improve the quality of healthcare falls under the jurisdiction of the Health Council of Serbia, the Ministry of Health, and the Agency for Accreditation of Healthcare Institutions of Serbia [38].

2. Accreditation of Healthcare Institutions

Accreditation of healthcare institutions is a process of verifying the quality of professional work, in which an authorized agency evaluates and recognizes programs or institutions that meet previously established standards proposed by expert teams. It refers to the assessment of physical capacities, working conditions, required staff qualifications, and fulfilment of occupational safety and health requirements [1]. If the institution adheres to the pre-established and published standards for a specific area of healthcare or branch of medicine, it receives an accreditation decision for a specific period of one, three, five, or seven years. Throughout the accreditation process, healthcare institutions receive advice and professional assistance for the improvement of healthcare quality.

Standards intended for the accreditation of healthcare institutions consist of a specific group of standards developed by healthcare professionals, based on the guidelines of The International Society for Quality in Health Care (ISQua). The association developed the International Accreditation Programme (IAP), which contains universally applicable principles for creating standards related to content presentation, clarity of definition and scope, comprehensive structure, well-defined processes, and the possibility of measuring application quality. Quality standards for healthcare institutions were first introduced in the United States as the Minimum Standard for Hospitals developed by the American College of Surgeons as early

as 1919 [2]. Accreditation activities officially began in 1951 when The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) was formed [8, pp. 67-78]. In the period from 1960 to 1980, this model was adopted in Canada, Australia, and Europe, and since 1990, in other countries worldwide. Accreditation is mandatory in a small number of states (e.g., in France), but in most countries, it is voluntary and can be national, international, or combined [31, pp. 684-700].

2.1 Accreditation of Healthcare Institutions in the Republic of Serbia

The Agency for Accreditation of Healthcare Institutions of Serbia was established in 2008 by a decision of the Government of the Republic of Serbia [32], with the task of performing professional, regulatory, and developmental activities within the national healthcare accreditation process. The legal basis for the establishment of the Agency consisted of the 2005 Law on Healthcare (Articles 213–218), the Law on Health Insurance (Article 178), and the 2005 Law on Public Agencies. The activities of the Agency for Accreditation of Healthcare Institutions of Serbia relate to establishing accreditation standards for healthcare institutions, assessing the quality of healthcare services provided to the population, resolving administrative matters regarding the accreditation of healthcare institutions, issuing public documents, accreditation certificates, and maintaining records of the issued certificates [19].

Accreditation, as a detailed external evaluation process, includes self-assessment against a set of standards, on-site investigation followed by report writing, and an assessment of whether the institution has passed accreditation and for what time period. The standards for the accreditation of healthcare institutions were developed by healthcare professionals through a joint project of the Ministry of Health and the World Bank titled "Serbia Health Project," for primary, secondary, and tertiary healthcare institutions. The decision granting consent to the determination of standards for the accreditation of healthcare institutions was published in the

"Official Gazette of the Republic of Serbia," No. 28/2011 [1]. Before official implementation, the standards were tested through two pilot projects: the first from 2006 to 2008 in 20 public healthcare institutions (four hospitals and 16 primary healthcare centers), and the second in 2010 in five public and four private healthcare institutions (three hospitals, three primary healthcare centers, two pharmacies, and one laboratory diagnostics institute). Of the 24 public healthcare institutions that participated in the pilot projects, seven institutions did not apply for accreditation after the pilot project, six were accredited in one cycle, and 11 institutions were accredited in multiple accreditation cycles.

The accreditation of healthcare institutions officially began in 2011, since which the Agency for Accreditation of Healthcare Institutions of Serbia has been conducting verification processes and publishing the Records of issued accreditation certificates for healthcare institutions on its website. Accreditation aims to direct the collaborative work of management and employees toward improving service quality to meet the needs and expectations of patients as service users. Within the accreditation cycle, the observed healthcare institution implements accreditation standards, monitors, measures, analyses, and improves processes, leading to enhanced quality of provided services, as well as the safety of patients, the environment, and employees. Through external objective assessment and the use of established standards, accreditation involves healthcare professionals, acts proactively, focuses on processes rather than individuals, encourages the continuous improvement of a quality culture, and ensures periodic monitoring of compliance with standards [8, pp. 67-78].

Healthcare quality improvement programs (including the accreditation of healthcare institutions) are complex, demanding to implement, and require significant financial resources and time; for these reasons, it is necessary to examine their true effects on quality improvement. Within the professional community, there are differing opinions on whether accreditation contributes to improving the quality of work in healthcare, and several studies have been conducted to investigate the link between accreditation and quality.

On one hand, accreditation is considered an important mechanism that enables the performance assessment of healthcare institutions and leads to improvements in the quality and safety of provided healthcare services [20, pp. 29-49]. On the other hand, some authors believe that accreditation has a short-term impact on quality immediately after certification, but that this impact loses its effect over time [14, pp. 268-73]. The prevailing impression gained from certain research on accreditation is that organizational changes and compliance with recommended guidelines and standards do occur in hospitals during preparation for accreditation, but there is no evidence that accreditation contributes to providing higher quality healthcare to users [29, pp. 56-58]. A study conducted in Australia investigating the motivation of healthcare professionals to participate in the accreditation process showed that employees are highly motivated for teamwork on operational improvement. By participating in the accreditation process, employees promote and enhance a culture of quality in a way that exceeds professional requirements.

2.2 Research Results on the Prevalence of Accreditation of Healthcare Institutions

Accreditation of healthcare institutions in the public sector is conducted in healthcare facilities at the primary, secondary, and tertiary levels of healthcare, as well as in specific fields of healthcare, branches of medicine, dental medicine, or pharmaceutical health activities [2]. The Decree on the Network Plan of Healthcare Institutions determines the number of publicly owned healthcare institutions and their organizational units by healthcare levels and administrative districts [37]. According to the table of territorial distribution and bed capacities of healthcare institutions (which is an integral part of the aforementioned Decree), public healthcare activities in the territory of the Republic of Serbia are performed in 325 registered institutions, distributed across 26 administrative districts.

Based on the records available on the website of the Agency for Accreditation of Healthcare Institutions of Serbia, from July 2011 to

May 2025, a total of 229 accreditation decisions were issued for public and private healthcare institutions or parts of institutions at the primary healthcare level (including two institutions operating at multiple healthcare levels), 125 accreditation decisions for institutions at the secondary and tertiary levels, and 9 accreditation decisions for private practices, while three accreditation certificates were revoked. The accreditation decisions refer to different validity periods (1, 3, 5, or 7 years); in a certain number of institutions, only one accreditation cycle was conducted, while in others, accreditation was carried out in two or more cycles, depending on when the initial and subsequent accreditations were granted. Further analysis concluded that 192 healthcare institutions, out of a total of 325 registered in the public health sector in the territory of the Republic of Serbia (59%), received confirmation that they meet internationally and nationally recognized standards for healthcare activities, a specific field of healthcare, or a branch of medicine, dental medicine, or pharmaceutical health activity, in at least one accreditation cycle during the 2011–2025 period. Ninety-five institutions were accredited once, 97 institutions were accredited two or more times, while continuity in accreditation was achieved in 69 healthcare institutions, as shown in Table 1.

Table 1. Total number of accredited healthcare institutions by healthcare level for the period 2011–2025

	Primary health care	Secondary and tertiary health care	Multiple health care	Total
Accreditation	125	65	2	192
Once	60	35	0	95
Multiple times	65	30	2	97
Continuity	43	25	1	69

Source: Author's based on the records of the Agency for Accreditation of Healthcare Institutions of Serbia [1]

In Figure 1, a positive trend is observed in the number of accredited healthcare institutions, from 33 in 2011 to 125 accredited

institutions in 2024, which accounts for 38% of the total number of public healthcare institutions. Since the most recent data on the accreditation of healthcare institutions were published in May 2025, the figure of 119 institutions cannot be considered final and was therefore excluded from the analysis.

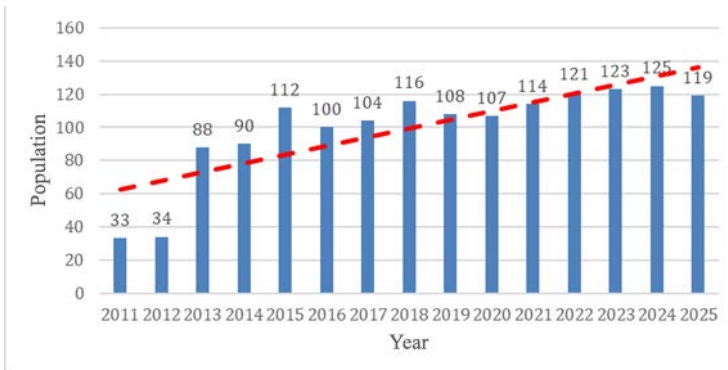


Figure 1. Number of accredited healthcare institutions in the period 2011–2025

Source: Author's based on the records of the Agency for Accreditation of Healthcare Institutions of Serbia [1]

Under Article 199 of the Law on Healthcare, accreditation costs are mandated to be borne by the applicant. Since the majority of these healthcare institutions are budget-funded, the insufficiency of financial resources constitutes a significant barrier to broader accreditation coverage and contributes to the observed lack of continuity between accreditation cycles.

3. Monitoring of Healthcare Quality Indicators

Mandatory activities for the monitoring, assurance, and improvement of healthcare quality in the Republic of Serbia have been implemented since 2004, following the Ministry of Health's strategic definition of quality enhancement as a primary healthcare policy objective [13]. These activities encompass the monitoring of quality indicators, the assessment of patient satisfaction with healthcare

services, the evaluation of employee satisfaction, and the development of quality improvement plans. The concept of continuous quality improvement (CQI) in healthcare is institutionalized within the legal framework, established through both primary and secondary legislation [18, pp. 21-27]. Furthermore, professional and scientific research in this domain enhances public accountability, ensures operational transparency, facilitates benchmarking between institutions, identifies best clinical practices, and fosters the continuous advancement of healthcare service quality.

The legal basis for monitoring healthcare quality indicators in the Republic of Serbia is established through secondary legislation and regulations issued by the competent ministry, which undergo periodic review and revision to align with the evolution of the healthcare system and shifts in clinical practice. Quality indicators are continuously adapted to address current needs and challenges within the healthcare sector, thereby ensuring their sustained relevance and applicability.

The Regulation on Healthcare Quality Indicators and Clinical Audit defines the indicators and prescribes the conditions, methods, and organization for conducting internal and external clinical audits, reporting forms, and measures for addressing potential deficiencies [36]. Healthcare quality indicators are established according to the level of healthcare activity, types of healthcare institutions, and medical branches, representing a statistical and quantitative measure of healthcare processes and outcomes. These indicators are utilized for the monitoring, evaluation, and improvement of patient treatment and nursing care, encompassing institutional performance indicators, quality improvement committee performance, waiting list management, patient safety, and both patient and employee satisfaction. The regulation facilitates systematic monitoring of healthcare outcomes and the identification of areas for improvement, while supporting evidence-based decision-making within the quality management process.

Public health institutes are responsible for the analysis of healthcare quality indicators, with the mandate to collect data from all healthcare levels within their jurisdiction, perform statistical

analyses, and provide recommendations or improvement measures. All healthcare institutions within the sector are required to establish a commission for the improvement of healthcare quality. This commission is responsible for adopting the annual monitoring plan for quality indicators, tracking these indicators, and compiling annual reports. Furthermore, the commission proposes measures to enhance service delivery and institutional performance, while adopting an annual plan for the continuous improvement of healthcare quality within the institution [38].

High-quality healthcare entails ensuring access to services for all citizens, an equitable territorial distribution of healthcare institutions and personnel, and the availability of a broad spectrum of healthcare services adaptable to the evolving and increasing needs of users [3, pp. 128-44]. The continuous improvement of quality and patient safety is an integral component of the daily professional practice of all healthcare workers. This constitutes an ongoing process aimed at achieving superior outcomes, enhanced efficiency, and higher levels of satisfaction for both healthcare users and providers.

3.1 Monitoring Patient Satisfaction

The study of user satisfaction dates back to 1965, when Cardozo published one of the first articles examining expectations and satisfaction at the University of Minnesota, USA. There is a universal consensus on the necessity of continuous patient satisfaction evaluation to enhance service quality and the effectiveness of healthcare systems [5, pp. 3-15]. Donabedian states that 'user expectations are what should set the standard for what is accessible, acceptable, pleasant, and timely. They are the ones who can tell us to what extent we have listened to them, informed them, enabled them to participate in decision-making, and treated them with respect' [25, pp. 1-9]. According to the WHO Declaration of Alma-Ata, individuals have both the right and the duty to participate in the planning and implementation of their own healthcare, thereby transitioning from passive users to active partners within the system.

Responsibility for healthcare quality is shared among healthcare professionals, associates, institutional management, and the patients

themselves as users of healthcare services. Consequently, it is essential to undertake activities aimed at increasing the expected quality of services from the perspective of the users [16, pp. 60-70]. While users may not always fully comprehend the systemic requirements of healthcare, the feedback they provide is instrumental in identifying specific aspects that necessitate improvement. Furthermore, user satisfaction should not be regarded as the sole relevant outcome of healthcare; rather, it represents a valuable adjunct to other quality indicators, such as health status, quality of life, and cost-effectiveness.

The first national survey on user satisfaction with healthcare services in the Republic of Serbia was conducted in 2004. Pursuant to the Regulation on Healthcare Quality Indicators, all healthcare institutions are mandated to conduct an annual survey and analysis of patient satisfaction, as well as to implement measures and activities for quality enhancement [33]. The research methodology is prescribed by the Institute of Public Health of Serbia 'Dr Milan Jovanović Batut,' utilizing standardized anonymous questionnaires tailored for primary, secondary, and tertiary levels of healthcare. The questionnaires are distributed to patients within the healthcare facility, with responses evaluated using a five-point Likert scale (ranging from 'very dissatisfied' to 'very satisfied'). Data processing is carried out by the healthcare institution in coordination with the competent regional institute of public health [13].

The assessment of user satisfaction is a vital instrument within the healthcare sector, serving as a benchmark for service quality, patient-centred care, and the overall efficiency of the healthcare system. A high level of user satisfaction fosters public trust in the utilization of public health services. In contemporary healthcare practice, patient satisfaction is recognized as a key quality indicator, as it enables an evaluation of the alignment between healthcare services and user expectations. Simultaneously, the analysis of the causes of dissatisfaction allows for targeted improvements in organizational structure and the overall quality of healthcare delivery.

3.2 Monitoring Employee Satisfaction

Employee satisfaction, as an indicator of organizational performance management, reflects how individuals perceive and experience their work, as well as their motivation to achieve superior professional results. This experience encompasses a combination of physiological, psychological, and environmental circumstances that generate a sense of fulfilment regarding one's occupational duties. Analyses of employee satisfaction within the healthcare sector address both general and specific satisfaction, while accounting for organizational variations. Healthcare managers are expected to understand their staff to identify effective ways of addressing their needs and motivators. Within the healthcare sector, job satisfaction contributes to enhanced, higher-quality, and more efficient healthcare delivery [22, pp. 362-73].

Studies investigating various factors influencing job satisfaction and interpersonal relationships among healthcare professionals are utilized to identify determinants that prevent employee dissatisfaction and to establish conditions for achieving desired satisfaction levels. While the most developed European Union countries primarily face challenges related to an aging healthcare workforce, high mobility, and professional attrition to non-healthcare sectors, Serbia has encountered a continuous migration of healthcare workers to developed European and global markets [17, pp. 165-73]. Research frequently identifies financial compensation, opportunities for professional development and continuing education, management practices, equipment, working conditions, and the burden of high patient volumes and administrative tasks as the primary drivers of dissatisfaction, often resulting in occupational stress and fatigue. Recent findings indicate that employees seek greater respect and recognition in the workplace [13], alongside professional autonomy, involvement in decision-making processes, and flexible working hours. Professional autonomy directly contributes to employee satisfaction; thus, organizational investment in this domain enhances the performance of healthcare workers [24, pp. 23-100]. Furthermore, studies exploring communication within the context of

job satisfaction suggest that the quality of service delivery significantly depends on effective collaboration across all organizational levels [23].

Employee satisfaction constitutes a critical indicator of performance management within the healthcare sector, as it exerts a direct influence on the quality of healthcare delivery. High levels of professional satisfaction are associated with increased productivity, reduced staff turnover, and improved patient clinical outcomes. Employee satisfaction indicators enable management to identify critical pain points within organizational culture, working conditions, and intra-team communication. The systematic monitoring and analysis of these indicators facilitate the development of strategies aimed at enhancing the work environment. Consequently, employee satisfaction serves as an essential instrument for measuring and improving the overall performance of healthcare institutions.

4. Research Results of Selected Performance Management Indicators in Public Health

The criteria of the Accreditation Standards for healthcare institutions at the primary, secondary, and tertiary levels of healthcare stipulate that institutions must monitor employee and patient satisfaction on an annual basis and based on the findings, implement activities to increase satisfaction levels [38]. The obligation to conduct research on user and employee satisfaction, alongside the preparation of corresponding analyses, was mandated by the 2007 Regulation on Healthcare Quality Indicators (Articles 60 and 61) [34] and the 2010 regulation of the same name (Articles 37 and 38) [35]. Pursuant to the 2010 Regulation on Healthcare Quality Indicators (Article 41), healthcare institutions were required to submit collected data for the calculation of quality indicators annually via the competent regional institute of public health to the Institute of Public Health of Serbia 'Dr Milan Jovanović Batut'. The Institute analysed these data and published them on its official website during the period 2009–2019 [15].

With the adoption of the 2021 Regulation on Healthcare Quality Indicators and Clinical Audit, healthcare institutions were mandated,

in addition to analysing research on user and employee satisfaction and implementing continuous quality improvement measures, to publish their research results on their official websites. An examination of the websites of healthcare institutions revealed that while certain facilities do publish analyses of satisfaction results, they do not do so in sufficient number or scope to allow for a continuous longitudinal link with the 2019 data, when the Institute of Public Health of Serbia 'Dr Milan Jovanović Batut' published the final comprehensive results for public healthcare institutions in the Republic of Serbia. Furthermore, these analyses were published with inconsistent frequency and covered varying time periods, while the results were presented based on the evaluators' preference as total counts, percentage distributions by group, mean values by department, or at the district and healthcare level.

4.1 Analysis of User Satisfaction

Out of a total of 58 facilities within the Network Plan of Healthcare Institutions in the territory of the City of Belgrade, 36 institutions have been accredited in at least one accreditation cycle, including 14 institutions or organizational units at the primary level of healthcare, 20 institutions or units at the secondary and tertiary levels, and two institutions operating across multiple levels of healthcare. Data regarding user satisfaction surveys were retrieved from the website of the City Institute of Public Health Belgrade, specifically from the 'Analyses of User Satisfaction with Healthcare Services in Public Health Institutions in Belgrade' [13], as mean average satisfaction scores for primary, secondary, and tertiary healthcare facilities. Table 2 presents the overall average scores of the user satisfaction research results for both accredited and non-accredited public health institutions at the primary, secondary, and tertiary levels of healthcare in the City of Belgrade for the period 2011–2023. In cases where only specific parts of an institution were accredited, the average user satisfaction score derived at the institutional level was analysed, rather than the scores of its individual organizational units.

Table 2. Overall mean scores of user satisfaction research results for accredited and non-accredited healthcare institutions at the primary, secondary, and tertiary levels of healthcare in the City of Belgrade for the period 2011–2023.

	Accredited Institutions (A)	Non-accredited Institutions (N)	Difference (A-N)	Relative difference (%)
Primary Healthcare	4,14	3,96	0,18	4,55
Secondary Healthcare	4,47	4,51	-0,04	-0,89

Source: Author's calculation based on publicly available data from the City Institute of Public Health Belgrade [13]

An analysis of the mean average user satisfaction scores at the primary level of healthcare revealed an increase in satisfaction with healthcare services in accredited institutions compared to non-accredited ones. The mean average satisfaction score for accredited healthcare institutions was 4.03 in 2011, rising to 4.51 in 2023, representing an increase of 0.48. In comparison, the mean average user satisfaction score for non-accredited healthcare institutions was 3.92 in 2011 and reached 4.31 in 2023, reflecting a smaller increase of 0.39.

The overall mean user satisfaction score for non-accredited primary healthcare institutions during the 2011–2023 period was 3.96, whereas for accredited healthcare institutions, it was 4.14, representing a higher score by a margin of 0.18, which is 4.55% higher than the score of non-accredited institutions.

A decline in user satisfaction scores for healthcare institutions was observed between 2014 and 2017. According to analyses by the City Institute of Public Health Belgrade, this was primarily attributed to dissatisfaction with appointment waiting times, the number of available physicians, and the conditions in waiting rooms and examination offices. These findings can be linked to organizational changes within the public health sector, as well as the 2014 reduction in healthcare sector wages. In 2020, user satisfaction scores were equalized; however, these results should be interpreted with caution,

as the surveys were not conducted in full scope due to the COVID-19 pandemic. Users expressed the highest levels of satisfaction with the professionalism, courtesy, and quality of work of their chosen physicians and nurses, while dissatisfaction remained focused on waiting times for appointments and the availability of adequate medical staff in facilities.

An analysis of the mean average user satisfaction scores at the secondary and tertiary levels of healthcare revealed an upward trend in satisfaction for accredited institutions, rising from a score of 4.40 in 2011 to 4.65 in 2023 (representing a difference of 0.25). User satisfaction scores for non-accredited healthcare institutions at the secondary and tertiary levels also showed an increase, from 4.29 in 2011 to 4.66 in 2023 (a difference of 0.37).

The overall mean user satisfaction score for non-accredited healthcare institutions was 4.51, while for accredited institutions, it was 4.47, representing a lower score by a margin of 0.04, which is 0.89% lower than the score of non-accredited institutions). Fluctuations in user satisfaction trends between 2015 and 2017 can be attributed to organizational changes within the public health sector and the 2014 wage reductions for healthcare personnel. No significant difference was observed in user satisfaction scores between accredited and non-accredited institutions at the secondary and tertiary levels of healthcare. Users expressed dissatisfaction with hospital catering and accommodations, whereas they remained satisfied with the performance of nurses and physicians. Furthermore, user satisfaction levels are statistically significantly influenced by gender, age, education level, and the socioeconomic status of the respondents. Hospitals also vary in terms of staffing levels, equipment availability, and institutional size.

4.2 Analysis of Employee Satisfaction

An analysis of the mean average employee satisfaction scores in healthcare institutions within the City of Belgrade at the primary level of healthcare revealed an upward trend in accredited institutions, rising from 3.27 in 2011 to 3.65 in 2023 (a difference of 0.38). Employee satisfaction scores in non-accredited primary

healthcare institutions also increased, from 3.03 in 2011 to 3.77 in 2023 (a difference of 0.74). The fluctuations in employee satisfaction within primary healthcare institutions observed between 2014 and 2016 were due to the reduction in financial compensation for healthcare workers in the public health sector.

The overall mean employee satisfaction score for non-accredited healthcare institutions was 3.26, whereas for accredited institutions, it was 3.35, representing a higher score by a margin of 0.09, which is 2.76% higher than the score of non-accredited institutions). Employees most frequently cited financial compensation, professional recognition, and the opportunity to present ideas to supervisors as the primary reasons for dissatisfaction; conversely, they expressed satisfaction with immediate collaboration with colleagues, available equipment, and time management at work. Table 3 presents the overall average scores of employee satisfaction research results for both accredited and non-accredited healthcare institutions at the primary, secondary, and tertiary levels of healthcare in the City of Belgrade for the period 2011–2023.

Table 3. Overall mean scores of employee satisfaction research results for accredited and non-accredited healthcare institutions at the primary, secondary, and tertiary levels of healthcare in the City of Belgrade for the period 2011–2023.

	Accredited Institutions (A)	Non-accredited Institutions (N)	Difference (A-N)	Relative difference (A-N, %)
Primary Healthcare	3,35	3,26	0,09	2,76
Secondary Healthcare	3,25	3,09	0,16	5,18

Source: Author's calculation based on publicly available data from the City Institute of Public Health Belgrade [13]

An analysis of the mean average employee satisfaction scores in healthcare institutions within the City of Belgrade at the secondary and tertiary levels revealed an upward trend in accredited institutions, rising from 3.16 in 2011 to 3.51 in 2023 (a difference of

0.35). Employee satisfaction scores in non-accredited secondary and tertiary healthcare institutions also increased, from 3.05 in 2011 to 3.28 in 2023 (a difference of 0.23). Fluctuations were observed during the 2014–2017 period, stemming from the same factors identified in primary healthcare institutions.

The overall mean employee satisfaction score for non-accredited healthcare institutions was 3.09 whereas for accredited institutions it was 3.25 representing a higher score by a margin of 0.16, which is 2.76% higher than the score of non-accredited institutions. Employees expressed dissatisfaction with their salaries and work overload due to staffing shortages conversely, they were satisfied with the recognition of their work the leadership and organizational structure within the institution and the opportunities for professional development. When interpreting these results, the existing differences among institutions regarding the demographic structure of employees specifically gender age and profession should be considered. Furthermore, institutions vary in terms of size equipment availability and staffing levels all of which may have influenced the findings.

Conclusion

Accreditation of healthcare institutions is an external mechanism for assessing the quality of work within the public health sector. These are voluntary activities that healthcare institutions can implement in their operations as a model and tool for providing higher quality services continuous improvements and increasing the satisfaction of both users and employees.

This research shows that more than half of the institutions operating at the primary secondary and tertiary levels of healthcare were accredited in at least one accreditation cycle during the period from June 2011 to May 2025. One third of healthcare institutions have been accredited multiple times and maintain their accreditation status continuously or with intervals between accreditation cycles. Healthcare institutions funded by the budget often lack sufficient resources to implement the accreditation procedure which calls into

question equal access to this process and may affect the overall quality of healthcare services provided within the system.

The results of user satisfaction and employee satisfaction surveys which are conducted annually within the public health sector in the Republic of Serbia are also utilized to verify compliance with healthcare institution accreditation requirements. User satisfaction is considered a key indicator of performance management and healthcare quality as it reflects the alignment between their expectations perceived needs and actual experience within the healthcare system. Based on the research results it can be concluded that the accreditation of healthcare institutions has an impact on higher user satisfaction in accredited facilities operating at the primary level of healthcare but has no significant impact on user satisfaction in institutions at the secondary and tertiary levels of healthcare.

Employee satisfaction as an indicator of performance management in the public health sector represents the way employees perceive and experience their work and how motivated they are to achieve better results in their professional practice which directly affects the quality of healthcare provided. Based on the analysis of the mean average satisfaction scores it can be concluded that the accreditation of healthcare institutions has an influence on the increase in employee satisfaction in accredited facilities operating at both the primary level and the secondary and tertiary levels of healthcare.

The information obtained regarding healthcare quality indicators is used to gain insight into the performance effects of organizations within the health sector the impact on the health status of the population the decision-making process on financial resource allocation as well as for motivating employees toward lifelong learning to achieve continuous improvements.

Future research in the field of public health should be directed toward targeted and systematic investigations of the effects of healthcare institution accreditation on the quality of work within organizations in the public health sector. It is recommended to apply structured questionnaires to collect relevant data on the impact of

these quality assessment mechanisms on organizational performance and business results at all levels of healthcare in the Republic of Serbia.

As a proposal for improvement based on this research the establishment of a public electronically searchable registry on the website of the Agency for Accreditation of Healthcare Institutions of Serbia should be considered. Such a registry would enable simple and fast data searches according to various criteria which contributes to transparency and the accessibility of information.

Bearing in mind the importance of healthcare institution accreditation for ensuring the overall quality of healthcare as well as the positive impact on user and employee satisfaction it is recommended to intensify activities aimed at increasing the number of accredited healthcare institutions. Furthermore, it is necessary to promote other models for healthcare quality assessment certification of healthcare institutions accreditation of medical and testing laboratories and the achievement of business excellence as models and mechanisms that contribute to the provision of higher quality healthcare services. Therefore, it is recommended that the competent institutions create strategic support measures and through education technical assistance and financial incentives enable a broader application of quality assessment models and mechanisms within the healthcare system.

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**ANALIZA ODABRANIH POKAZATELJA
MENADŽMENTA PERFORMANSI U SEKTORU
JAVNOG ZDRAVSTVA U SRBIJI**

Apstrakt

Savremeni pristup merenju poslovnih performansi je zasnovan na praćenju skupa ključnih pokazatelja učinka koji čine finansijske, nefinansijske i performanse kvaliteta proizvoda ili usluga. Nefinansijske performanse i performanse kvaliteta usluga su značajne za javnozdravstvene organizacije koje posluju u neprofitnom sektoru, gde profit nije najvažnije merilo učinka. Za unapređenje kvaliteta zdravstvenih usluga i merenje performansi u sektoru javnog zdravstva koriste se različiti modeli i mehanizmi procene, među kojima je i akreditacija zdravstvenih ustanova. Praćenje pokazatelja kvaliteta zdravstvene zaštite, kao i ispitivanje zadovoljstva korisnika i zadovoljstva zaposlenih, sprovodi se kao obavezna aktivnost radi unapređenja kvaliteta pruženih zdravstvenih usluga. Cilj ovog rada je prikaz zastupljenosti akreditacije zdravstvenih ustanova i uticaj na zadovoljstvo korisnika zdravstvenih usluga i zadovoljstvo zaposlenih, kao odabranih pokazatelja menadžmenta performansi u sektoru javnog zdravstva. Primenjena metodologija istraživanja se odnosi na kvantitativnu, sekundarnu analizu javno dostupnih podataka bazirano na evidencijama o akreditaciji zdravstvenih ustanova Republike Srbije za period 2011-2025. godine i analizu statističkih podataka o zadovoljstvu korisnika i zadovoljstvu zaposlenih u javnozdravstvenim ustanovama grada Beograda za period 2011-2023. godine. Dobijeni rezultati i zaključci mogu imati praktični značaj za zdravstveni sistem, koji omogućava donosiocima odluka da steknu uvid u stanje i efekte primene akreditacije zdravstvenih ustanova zasnovano na konkretnim indikatorima zadovoljstva korisnika i zaposlenih.

Ključne reči: *menadžment performansama, akreditacija zdravstvenih ustanova, pokazatelji kvaliteta zdravstvene zaštite, zadovoljstvo korisnika, zadovoljstvo zaposlenih.*

JEL klasifikacija: I11, M10, L15