İşletme Bilimi Dergisi
Journal of Business Science

e-ISSN : 2148-0737
Publisher : Sakarya University

Vol. 14, No. 1, 221-235, 2026
DOI: https://doi.org/10.22139/jobs.1721906

Research Article

The Impact of Healthcare Workers' Perception of the Quality on Their Performance Levels: A Study of Nurses at Zonguldak State Hospital

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Received: 18.06.2025
Accepted: 21.11.2025
Available Online: 06.03.2026

Abstract: The primary objective of this research is to assess the impact of healthcare workers' perceptions of quality on their performance levels and to identify the sub-factors that influence these perceptions. In this study, which was conducted with an explanatory research design, the data were collected by using an online questionnaire from 385 nurses working in a state hospital within Zonguldak province of Türkiye. SPSS and AMOS statistical software programs were employed to analyze the data collected during the research. In the study, the relationships among variables were tested using the structural equation modeling technique. According to the primary findings obtained as a result of the analysis, the dimensions influencing healthcare workers' perception of quality include 'management and leadership', 'utilization of human resources', 'quality education', and 'patient benefit'. These four dimensions significantly shape healthcare workers' quality perceptions and profoundly impact employee performance. Therefore, these empirical findings indicate that healthcare workers' perceptions of quality significantly the services they provide by affecting their performance.

Keywords: Quality Management, Quality Perception, Employee Performance

1. Introduction

Quality management is a management perspective that provides unique ideas, concepts, tools, and methods for organizations seeking to enhance their effectiveness and efficiency by restructuring their activities through process improvement models. This approach, typically developed using methods and techniques from the manufacturing sector, is also supported by applications tailored to the service industry. According to Imai (1997), two types of quality concepts can be identified: (i) output quality and (ii) process quality. Similarly, Ghobadian and colleagues (1994) argue that the quality of service provided in service organizations is related not only to the output but also to the processes in which customers are active participants. This perspective positions perceived quality as not merely a reflection of customer expectations; rather, actual process quality and actual output quality serve as the primary determinants of quality perception (Ghobadian et al., 1994, p. 49). Conversely, a significant limitation of approaches that emphasize process measurement models based on statistical process control techniques is their failure to adequately represent the perspectives of both service providers and service recipients (Urban, 2013). The general trend towards enhancing the quality of health services is characterized by the widespread adoption of standardization approaches (Çerçi & Baykal, 2022). This trend encourages both regulatory institutions and organizations, as well as service units that deliver health services, to develop more effective policies and strategies for the adoption and dissemination of quality standards (Işıkçelik et al., 2019, pp. 211-212). Quality standards ensure that health services adhere to scientific benchmarks, prevent the waste of resources allocated for the development of these services, and facilitate the provision of services in a more effective and efficient manner (Ertaş & Çelik, 2018, p. 19). In other words, quality management guarantees that the appropriate services are delivered at the right time, in the right quantity, and in the right manner (Çerçi & Baykal, 2022).

The prevailing method for assessing the perception of service quality in healthcare organizations involves collecting data through questionnaires designed to gauge patient satisfaction (Aliman &

Cite as(APA 7): Ecek, N., & Başaran, İ. M. (2026). The impact of healthcare workers' perception of the quality on their performance levels: A study of nurses at Zonguldak state hospital. *İşletme Bilimi Dergisi, 14*(1), 221-235. https://doi.org/10.22139/jobs.1721906

Mohamad, 2016; Chakravarty, 2011; Deniz & Büyük, 2017; Koubaa Eleuch, 2011; Sezer et al., 2020; Tarcan et al., 2020; Zafer & Ünal, (2016). Hall and colleagues (2008) argue that this approach, which assumes that patient feedback can be utilized to enhance the performance of service providers and health processes, is inadequate for measuring the quality perceptions of healthcare professionals. Reinders and colleagues (2011) further contend that while the data obtained from questionnaires assessing patients' expectations and perceptions can be beneficial for improving healthcare processes, the impact of this information is quite limited. A primary reason for this limitation is the disparity between the quality priorities of healthcare professionals and the expectations of patients.

The primary objective of this research is to investigate the impact of healthcare professionals' perceptions of quality on employee performance. The research model developed for this study emphasizes the influence of the sub-dimensions: "management and leadership," 'utilization of human resources,' 'quality training,' and 'patient benefit' on 'employee performance.' The key research questions that this study aims to address are as follows:

- How are the sub-dimensions that influence healthcare workers' perceptions of quality ranked in terms of effect size?
- To what extent do healthcare workers' perceptions of quality influence employee performance?

The research is organized into five sections. The first section, titled “Introduction,” addresses the research problem within the context of existing literature. It highlights the theoretical and practical significance of the topic and clearly outlines the study’s objectives and scope. The second section presents the conceptual framework, focusing on the primary variables. The third section describes the key characteristics of the research population and the sample selected to represent it. This section also reports the main findings from relational statistical analyses, along with assessments of reliability and validity. The fourth section discusses the theoretical, managerial, and practical implications derived from the empirical results in relation to existing literature. The final section offers the conclusions drawn from the findings and discussions.

2. Conceptual Framework

This section of the study examines in detail the two fundamental variables that constitute the conceptual framework of the research—namely, ‘quality perception’ and ‘employee performance.’ This analysis draws on relevant literature to provide a theoretical foundation for the study’s main hypothesis.

2.1. Quality perception of healthcare professionals

The concept of quality possesses a multidimensional structure, encompassing social, psychological, and technical phenomena, making it challenging to agree on a universal definition. According to Ross (2014, p. 6), quality is a measure of the conformance of goods and services to specified standards or the extent to which they satisfy customer needs. Halis (2013, pp. 18-19) notes that the concept of quality encompasses the meanings of standards, usability, and the actual needs of customers. According to Hoyle (2001), quality management strategies reflect the needs and expectations of relevant stakeholders. Furthermore, the concept, which can be interpreted as assessments of the quality of the offered product or customers' perspectives on quality, significantly influences how stakeholders perceive environmental stimuli and events, shaped by individual personality traits and diverse experiences (Kenyon & Sen, 2015, pp. 2, 41). This variability is a key factor that shapes individuals' perceptions of quality. Thus, in the healthcare sector, quality assumes an especially critical role: for patients and their families, it ensures safety, trust, and satisfaction with care; for healthcare professionals, it contributes to job performance, motivation, and professional fulfillment; and for healthcare institutions, it enhances operational efficiency, institutional reputation, and long-term sustainability.

Consequently, the quality perceptions of various stakeholders, including employees, directly influence the delivery of health services (Hupal, 2019). According to the findings of a study conducted by Almansey and colleagues (2016), which examined overall service quality in healthcare organizations from the perspectives of both employees and external customers, the overall satisfaction of these groups is significantly impacted by the quality of service provided. The meta-analysis conducted by Biçer and colleagues (2019) compared research findings on perceived and expected service quality in healthcare institutions. Gülen and Zaybak (2023) revealed that patients' perceptions of nursing care quality were higher than those of nurses. Similarly, Willems and Ingerfurth (2018) found a general discrepancy between patients' and employees' perceptions of quality; specifically, healthcare professionals' perceptions of quality were lower than those of patients. In an unpublished thesis study conducted by Nwosu (2006), it was observed that inpatients rated quality variables lower than nursing assistants did. Similarly, Padamata and Vangapandu (2023) compared the perceptions of healthcare quality between employees and patients in Indian hospitals. They found that staff had more positive perceptions, while patients reported lower perceptions of many quality indicators. Bayer and colleagues (2019) discovered that quality surveys increased the workload of healthcare providers, with most of this burden falling on nurses. Therefore, although the process of obtaining feedback through quality surveys positively impacts patients' perceptions of quality, empirical findings indicate that these perceptions do not significantly influence employees' perceptions.

2.2. Employee performance of healthcare professionals

Since the enhancement of health service quality relies on the successful collaboration of all stakeholders involved in the service production process, it is essential to emphasize the performance appraisal process (Yatkın, 2008). Raveendran and Hameela (2020) assert that this process contributes to the achievement of an organization's mission and goals by elevating employee performance levels. Sharma (1986, pp. 47, 72) defines employee performance as *"the behavior of fulfilling the requirements of a job"* and identifies the variables of job performance as towards superiors, and estimation of production data. Similarly, Pawar (2020) defines job performance as level of output produced by an employee, Vroom (1964) characterizes it as result of multiplying ability by motivation. Pawar (2020) asserts that an employee's overall performance encompasses contextual performance, which includes task performance, taking on additional responsibilities, assisting colleagues, and making innovative suggestions. In contrast, Koopmans and colleagues (2011) revealed that individual job performance consists of four sub-dimensions which can be listed as *'task performance', 'contextual performance', 'counterproductive work behaviour'* and *'adaptive performance'*.

The performance appraisal process provides crucial information regarding the alignment between an organization's objectives and the knowledge and skill levels of its employees. Gökaslan (2000) asserts that performance appraisal studies elucidate personal, managerial, and organizational issues by facilitating effective planning; they also establish a robust compensation and reward system while mitigating potential problems and organizational conflicts. Ertuğrul (2006) notes that the performance appraisal process not only enhances managerial control but also fosters continuous development. In this context, the feedback obtained from the performance appraisal process can significantly elevate both individual and organizational performance. According to Mohammad Mosadeghrad (2013), quality improvement enhances organizational performance by reducing costs and increasing productivity. In the study conducted by Harkey and Vraciu (1992), a positive relationship was identified between quality and profitability. This relationship was explained by the observation that improvements in the quality of healthcare services lead to an increased market share for healthcare providers, with the resulting higher productivity reflected in overall pricing levels.

According to Platis and colleagues (2015), one of the most fundamental challenges in healthcare services is employee performance and the strategies to enhance this performance level.

Individual performance in healthcare is closely linked to operational management, financing, information management, efficiency, and quality dimensions. Research findings by Şahin and Çankır (2019) on service sector employees, as well as Çankır (2021) on justice sector employees, indicate that the perception of sustainable quality has a direct and significant impact on job performance. Additionally, Raveendran and Hameela (2020) found in their study of the banking sector that the perceived quality of the performance appraisal system directly and strongly influences perceived job performance. Sedláček and colleagues (2011) conducted a study on tourism companies operating in the Czech Republic and discovered that these companies view the concept of quality as a key component of business performance. Furthermore, the financial indicators of companies with high service quality are positively affected by this perception. In a study conducted by Kyoon Yoo and Park (2007) on the hotel industry, empirical findings indicated that customer satisfaction mediates the relationship between perceived service quality and financial performance. Conversely, the research by Shiriana and Asgarikiab (2014) on international hotel employees in Iran revealed that the implemented total quality program did not enhance employees' job performance or overall satisfaction in all areas; rather, it only had a significant impact on facilitating adaptation to changes in the workplace. Additionally, an unpublished dissertation by Irungu (2017) found that the service quality provided by pharmaceutical retail companies in Kenya significantly influenced employee performance levels. In the studies conducted by Nazeer and colleagues (2014) on faculty members in higher education institutions in Pakistan and Singh (2016) on police officers, it was observed that internal service quality has a significant and strong impact on job performance. A common conclusion drawn from the literature review in this area is that quality initiatives in the service sector enhance employee satisfaction, while employee performance and overall productivity are positively influenced by quality management practices. These interactions, which positively affect organizational performance, support the theoretical premise that there is a positive relationship between quality and performance.

The final stage of the literature review concentrated on studies that examined nurses as a research unit within the healthcare sector, specifically focusing on the relationships between quality and performance variables. It was noted that quality management practices that enhance control over processes positively influence employee performance. In a study conducted by Irfan and colleagues (2012) involving doctors in Pakistan, it was observed that quality management practices have strong positive effects on operational performance levels. Additionally, the research by Moon and colleagues (2016) explored nurses' perceptions of patient safety and job performance in relation to health service accreditation criteria, revealing a positive correlation between quality perceptions and job performance.

Considering the existing literature in this field, the primary hypothesis of the study was to examine the relationship between healthcare professionals' perceptions of quality and their job performance. Consequently, the research hypothesis was formulated as follows:

H_1: The perception of quality among healthcare professionals significantly impacts their performance.

3. Methodology

The basic methodology of the research is analyzed in three subsections. The first subsection provides a detailed explanation of the research model, the research sample, the sampling frame, the research population, and the theoretical universe, as well as the scales that comprise the questionnaire used as a data collection tool. The second subsection presents the results of the statistical tests assessing the reliability of the research process and the data obtained from the research units, as well as the validity of the data collection instrument. Finally, the third section, the last section presents the results of the causal relationships identified through the path analysis conducted.

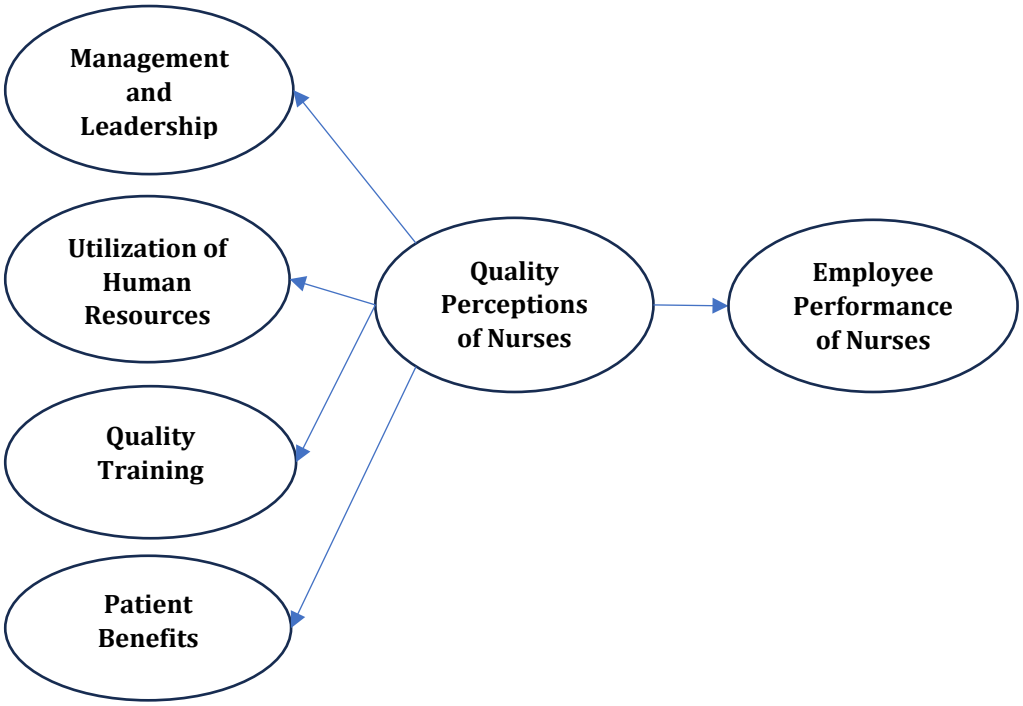
3.1. Data collection tool and research population

In this study, which employed an explanatory research design, data were collected using a questionnaire method. The questionnaire was specifically crafted to gather essential data for statistical analyses related to the fundamental variables of the research and consisted of two sections. The first section included seven questions aimed at obtaining demographic information about the health workers participating in the study. The second section comprised 70 questions representing the observed variables used to measure the two primary variables of the research: quality perceptions and employee performance of healthcare professionals. The "Healthcare Workers Quality Perception Scale", developed by Bayer and Baykal (2018), was employed to assess the quality perceptions of health workers. The scale in question assesses the quality perceptions of healthcare professionals and is structured into seven sub-dimensions: *"Management and Leadership"* (12 items), *"Utilization of Human Resources"* (14 items), *"Quality Training"* (6 items), *"Assessment and Evaluation"* (6 items), *"Institutional Benefits"* (10 items), *"Employee Benefits"* (8 items), and *"Patient Benefits"* (14 items). In the confirmatory factor analyses conducted as part of the research, the latent variables of 'Assessment and Evaluation,' 'Institutional Benefits,' and 'Employee Benefits' were excluded from the measurement model due to values that contradicted model fit and construct validity. Consequently, the Quality Perception Scale for Healthcare Professionals was represented in the research model as a structure comprising of four latent constructs.

"Employee Performance Scale", developed by Kirkman and Rosen (1999) and adapted by Sigler and Pearson (2000) was utilized to evaluate employee performance. In Turkish literature, the previously mentioned performance evaluation scale has been employed in studies conducted by Ünal and Günay (2016) on employees in the Turkish telecommunications sector, Köksal and colleagues (2018) on employees in a public organization in Türkiye, and Çöl (2008) on academics in public institutions in Türkiye.

Figure 1

Research Model



Within the measurement model, all observed variables included in the research framework were assessed using a five-point Likert scale. Within the framework of the tested research model, the effects of these four sub-dimensions of quality perception on employee performance levels were analyzed. The research model tested in this study is illustrated in Figure 1.

SPSS and AMOS, statistical software programs developed by IBM, were employed to analyze the data collected during the research. The empirical data obtained to examine the relationships among the primary variables were analyzed using the structural equation modeling technique. This technique enables the testing of multivariate causal relationships within a single research model, assuming a causal structure exists between the set of latent variables and that these latent variables can be measured by the observed variables (Maclean & Gray, 1998).

The study population comprised 441 nurses actively employed at a public hospital in city center of Zonguldak. Following the approval of the ethics committee and institutional consent, online questionnaires were distributed to participants on a voluntary basis from November 16, 2023, to January 31, 2024. Due to some employees being on annual leave, having received medical reports, being temporarily transferred, or opting not to participate in the study, a total of 385 valid responses were collected.

3.2. Validity and reliability

Following the data collection process utilizing online questionnaire forms, confirmatory factor analyses and reliability tests were conducted to validate the measurement model employed in the research, assess the validity of the scales used, and evaluate the reliability of the data collection process. The goodness-of-fit values were as follows: χ^2 = 2516.840, df = 866, p = 0.05, χ^2/df = 2.516, SRMR = 0.055, CFI = 0.930, RMSEA = 0.063) The construct validity of the model was confirmed, as the results obtained from the primary level confirmatory factor analysis fell within acceptable limits (Gaskin & Lim, 2016; Hair et al., 2014; Hu & Bentler, 1999; Schumacker & Lomax, 2004).

Table 1 presents the results of the confirmatory factor analysis, demonstrating the reliability of the measurement process and the convergent validity of the measurement tool. The Cronbach's alpha values, which indicate the internal consistency among the responses to the observed variables included in the analysis for measuring the same latent variable, exceed 0.70 for all latent variables. This indicates a high level of internal consistency in the measurements of these latent variables. Furthermore, the average variance extracted (AVE) values, calculated from the squared means of the standardized regression coefficients of the observed variables, are above 0.50 for all latent variables, signifying strong convergent validity (Byrne, 2010; Sarstedt et al., 2021).

Table1

Discriminant and Convergent Validity

Variables of the Research	Composite Reliability (CR)	Reliability Coefficient of Cronbach Alpha	Average Variance Extracted	Multiple Shared Variance	MaxR(H)
Management and leadership	0.967	0.968	0.728	0.651	0.969
Utilization of	0.950	0.951	0.638	0.629	0.957
Quality training	0.934	0.937	0.740	0.651	0.936
Patient benefits	0.964	0.965	0.677	0.629	0.967
Employee	0.926	0.923	0.757	0.563	0.928

To assess the discriminant validity among the latent variables in the measurement model, the correlations between these variables were compared to the square root of the average variance extracted (AVE) values. The correlation values, presented in italics in Table 2, are lower than the threshold values calculated by taking the square root of the AVE values in the corresponding rows and columns, which are displayed in bold and italic along the diagonal. Additionally, the maximum H-reliability (MaxR(H)) values shown in Table 1 exceed the corresponding composite reliability (CR) values. According to Fornell and Larcker (1981), the discriminant validity is within acceptable limits; in other words, the limited correlation between the latent variables confirms that these variables are perceived as distinct. Furthermore, as illustrated in Table 1, the AVE values are greater than the maximum shared variance (MSV) values. This indicates that, according to Sarstedt and colleagues (2021), discriminant validity is established. Therefore, based on these findings, it can be concluded that the fundamental assumption of construct validity is also satisfied in terms of discriminant validity.

Table 2

Discriminant Validity

Variables of the Research	**Management and leadership**	**Utilization of human resources**	**Quality training**	**Patient benefits**	**Employee performance of nurses**
Management and leadership	**0.853**				
Utilization of human resources	0.715	**0.799**			
Quality training	0.807	0.791	**0.860**		
Patient benefits	0.646	0.793	0.758	**0.823**	
Employee performance of nurses	0.502	0.625	0.591	0.750	**0.870**

3.3. Findings from relational statistical analysis

The fundamental theoretical analyses of relational causality established in this research are summarized in Figure 2. Notably, the sub-dimension with the most significant impact on employees' quality perceptions is quality training ($\beta_{QT} = 0.897, p < 0.05$). Additionally, the utilization of human resources strategies ($\beta_{UHR} = 0.889$), patient benefit ($\beta_{PB} = 0.876$), and management and leadership sub-dimensions ($\beta_{ML} = 0.804$) also exhibit closely related and high values. In addition, it is evident that quality perceptions have a substantial effect on employee performance ($\beta_{EP} = 0.719, p < 0.05$).

Figure 2

Results of the Analysis of the Causal Relationships Among the Research Variables

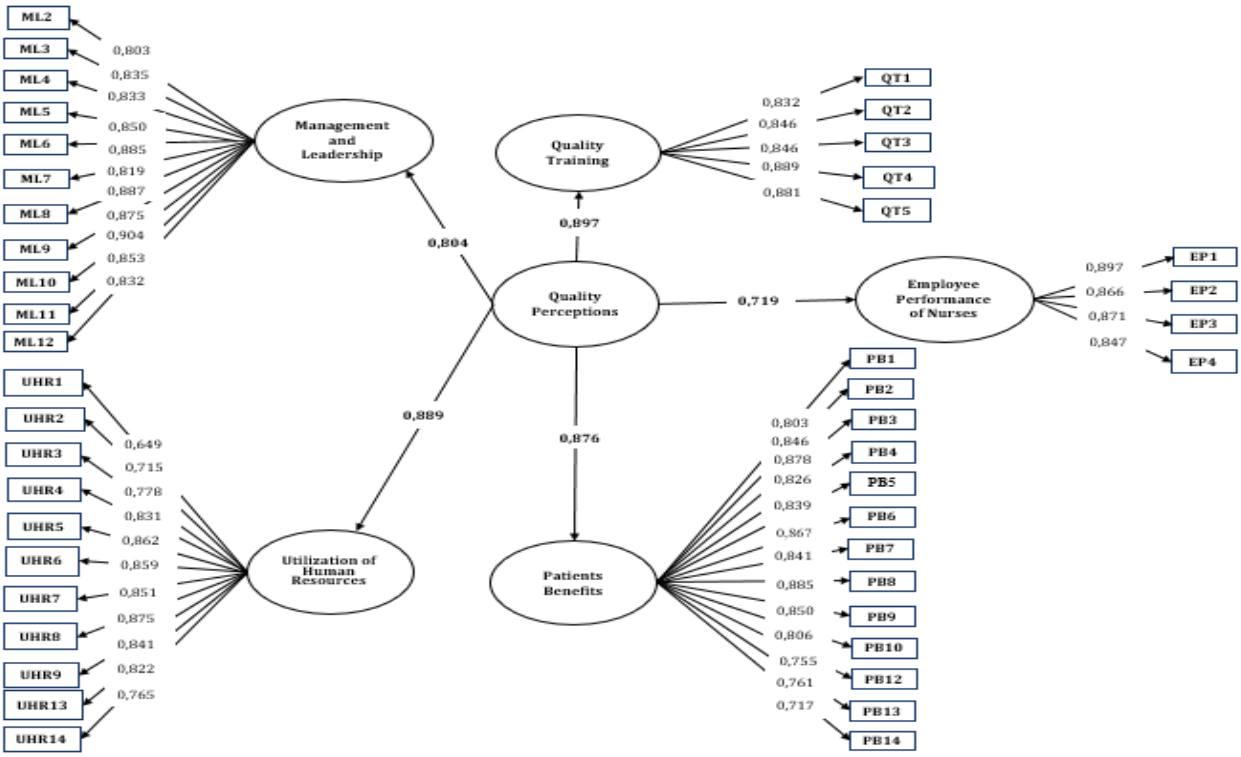


Figure 2 presents the standardized regression coefficients, which reflect the contribution of each explicit variable measured in the study to the assessment of the corresponding latent variable, as well as the causal relationships that constitute the measurement model. Table 3 displays the results of the tests examining the impact of nurses' perceptions of quality on the level of employee performance — the primary hypothesis of this research.

Table 3

Results of Path Analysis

Hypothesis	Hypothesized Relationship		Standardized Estimate	t-value	p-value	Hypothesized Relationship
	Independent Variable	Dependent Variable				
H_1	Quality Perceptions of Nurses	Employee Performance	0.719	12.369	0.000	Supported

Consequently, these empirical findings indicate that employees' perceptions of quality significantly influence the services they provide by affecting their performance.

Table 4

Explanatory Power of the Main Variables in the Structural Model

Squared Multiple Correlations (R^2)	
Management and leadership	0.647
Utilization of human resources	0.791
Quality training	0.804
Patient benefits	0.767
Employee performance	0.517

Looking at the R^2 values of the research model presented in Table 4, it is evident that a substantial portion of the total variance associated with the primary variables of the study is accounted for within the framework of the measurement model.

4. Discussion

Quality management practices have both intrinsic and extrinsic impact areas. In this context, patient satisfaction resulting from quality management activities is regarded as an extrinsic benefit, while employee perceptions of quality and the increased productivity levels stemming from these perceptions are considered intrinsic benefits (Idris et al., 2022; Llopis & José Tarí, 2003). Although there is a prevailing research trend in the field of quality management that traditionally emphasizes the establishment of leading quality standards and the successful completion of relevant independent audits as the internalization of quality management systems, there is also a growing trend questioning the internalization of quality management activities, the extent of their adoption, and the performance effects associated with these activities (Boiral, 2011; Nair & Prajogo, 2009). This study, which adopts a theoretical approach aligned with this research trend, employs an explanatory research design to explore the causal relationships between healthcare workers' quality perceptions and their professional performance levels.

Using systematic methods to enhance the quality of services provided by healthcare institutions is one of the primary responsibilities of healthcare professionals who actively participate in delivering care. However, the needs for health services can vary significantly from patient to patient. Consequently, the effects of this variability are evident in the fundamental characteristics of the health services offered. Despite these differing conditions, process improvement studies aimed at creating greater value for patients by refining healthcare processes encounter two main quality concepts: "*(i) quality of outcomes and (ii) quality of processes*". A significant risk associated with approaches that emphasize the outputs of health services is that they reduce quality to merely aligning the characteristics of the service with the desires and expectations of the patient, thereby neglecting the true quality of the process and the actual quality of the outcomes. Conversely, a notable limitation of approaches that assess healthcare processes against specific quality indicators and standards is that they may not adequately capture the perspectives of patients and healthcare professionals during the restructuring of healthcare processes.

The findings strongly support the existing literature (Chikazhe et al., 2022) indicating that service quality, as perceived by service workers, positively affects their job performance. Nurses' perceptions of the quality of healthcare services are crucial due to their central role in delivering these services and their comprehensive understanding of the entire healthcare process across various departments (Kamalasanan et al., 2023). The empirical findings of this study reveal that the four sub-dimensions of nurses' perceptions of healthcare quality—namely, 'management and leadership,' 'human resource utilization,' 'quality education,' and 'patient benefit'—significantly influence employee performance. These results are consistent with findings from several studies conducted in the health sector (Moon et al., 2016) as well as from various other sectors (Çankır, 2021; Irungu, 2017; Nazeer et al., 2014; Raveendran & Hameela, 2020; Sedláček et al., 2011; Shiriana & Asgarikiab, 2014; Singh, 2016; Şahin & Çankır, 2019). These studies examined the relationship between quality and performance and aligned with foundational theories, including transformational leadership theory, total quality management, learning organizations, and knowledge management.

The findings align with general motivation theory (Herzberg et al., 2011; Herzberg, 2015), which posits that employees perform at higher levels when supported by both intrinsic and extrinsic motivational factors. Consequently, employees are more motivated and successful in their roles when they feel a sense of accomplishment derived from strong leadership, possess empowered competencies, gain autonomy, and work in an environment conducive to their personal development. The significant impact of healthcare workers' perceptions of quality on employee performance strongly reinforces this theory.

5. Conclusion

Quality management systems are essential components that significantly influence the success of various types of business organizations (Naveh & Marcus, 2005; Terziovski & Power, 2007). However, some empirical studies indicate that these systems may not yield the expected performance improvements (Lo et al., 2011). Considering the resources allocated to these systems and the anticipated performance enhancements, it is vital to conduct a thorough examination of the interactions among the factors that contribute to the effectiveness of quality management systems.

The research employed an empirical methodology to assess the extent to which employee performance—one of the primary factors influencing service processes in healthcare organizations—is affected by the dimensions of healthcare workers' quality perceptions. Consequently, this study, grounded in a theoretical framework, aims to enhance process improvement activities within healthcare organizations by examining the impact of healthcare workers' quality perceptions on their professional performance levels.

According to the primary findings of this study, which investigates the effects of quality perceptions of nurses on their professional performance in a province of Türkiye, the dimensions influencing healthcare workers' quality perceptions include 'management and leadership,' 'utilization of human resources,' 'quality education,' and 'patient benefit.' These four dimensions significantly shape the quality perceptions of healthcare workers and have a profound impact on employee performance.

This study has several limitations. First, the empirical analysis is limited to nurses working in public hospitals in the city center of Zonguldak, which may restrict the generalizability of the findings to other healthcare settings and comparable professional groups. In addition, cross-sectional design limits the ability to assess long-term causal relationships between quality perceptions and performance. Future research could address these limitations by employing study designs that include physicians and other healthcare professionals and that examine trends over extended periods, particularly considering global changes. Additionally, cross-country comparative analyses could provide broader insights. Furthermore, qualitative approaches may offer a deeper understanding of the mechanisms linking quality perceptions and performance.

From a practical perspective, these findings offer several implications for healthcare administrators and policymakers. Hospital administrators are encouraged to strengthen their management and leadership practices, ensure the effective utilization of human resources, and invest in ongoing quality education programs. Furthermore, emphasizing patient-centered benefits can foster a quality-focused organizational culture that not only enhances employee performance but also improves patient satisfaction and overall healthcare outcomes. These insights can guide academics aiming to advance research on quality management in healthcare, as well as decision-makers striving to improve the efficiency and effectiveness of healthcare services.

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Article Information Form

Author Contributions:

Conceptualization: NE, İMB; Methodology: NE, İMB; Validation: İMB; Formal analysis: İMB; Investigation: NE; Resources: NE; Data curation: NE; Writing – original draft: NE; Writing – review & editing: İMB; Visualization: NE; Project administration: NE, İMB;

Ethical Statement: Research data were collected following the approval of the Zonguldak Bülent Ecevit University Ethics Committee (dated 29.09.2023, approval number 357170).

Conflict of Interest Disclosure: No potential conflict of interest was declared by authors.

Artificial Intelligence Statement: No artificial intelligence tools were used while writing this article.

Plagiarism Statement: This article has been scanned by iThenticate.