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A Priority Based Management Analysis of Patient Satisfaction Using the SERVQUAL Model: Evidence from Hospital Service Quality Evaluation

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Abstract: Patient satisfaction is a key indicator of healthcare service quality and an essential measure for evaluating hospital performance. This study focuses on hospital services as the research object. It aims to analyze patient satisfaction by examining the dimensions of service quality, namely reliability, responsiveness, assurance, empathy, and tangibles, based on the SERVQUAL model. The study used a quantitative approach, administering a structured questionnaire to inpatients and outpatients. The collected data were analyzed using descriptive statistics and inferential analysis, complemented by a priority-based evaluation to identify the most critical factors influencing patient satisfaction. The findings reveal gaps between patient expectations and perceived service performance, particularly in facility cleanliness, service timeliness, and interpersonal interactions. The weighted gap analysis identifies facility cleanliness and service timeliness as the main priorities for hospital service improvement. These findings suggest that hospital management should focus on enhancing interpersonal service quality and improving service efficiency to achieve higher levels of patient satisfaction. This study provides practical insights for hospital administrators in developing priority-based strategies to improve service quality and strengthen patient-centered care.

Keywords: Service Quality, Quality Dimensions, Patient Satisfaction, Hospital Management

INTRODUCTION

The healthcare sector plays a fundamental role in improving population health and overall quality of life. Hospitals, as primary providers of healthcare services, are expected to deliver care that is not only clinically effective but also responsive to patients' expectations and experiences. According to the World Health Organization, patient-centered care has become a global priority, emphasizing the importance of incorporating patients' perspectives in evaluating healthcare quality (WHO, 2020). Consequently, patient satisfaction has emerged as a critical performance indicator in assessing hospital service quality.

Patient satisfaction refers to patients' evaluation of healthcare services based on the alignment between their expectations and actual experiences during the care process. Recent studies indicate that higher levels of patient satisfaction are closely associated with improved treatment adherence, better health outcomes, and increased trust in healthcare institutions (Batbaatar et al., 2021; Gleeson et al., 2023). Conversely, patient dissatisfaction may result in reduced utilization of healthcare services, negative word-of-mouth, and diminished hospital credibility.

In the context of increasing competition and ongoing healthcare reforms, hospitals are under growing pressure to continuously improve service quality. Contemporary research highlights that patient satisfaction is influenced not only by clinical outcomes but also by service-related factors such as communication effectiveness, staff responsiveness, waiting time, and the quality of the physical environment (Alrawadieh et al., 2020; Xesfingi & Vozikis, 2020). These findings underscore the importance of adopting a holistic approach to healthcare quality that integrates both clinical and non-clinical dimensions.

Various service quality measurement models have been widely applied in healthcare research. Recent empirical studies utilizing the SERVQUAL framework demonstrate that reliability, responsiveness, assurance, empathy, and tangibles remain relevant dimensions in evaluating hospital services (Purcărea et al., 2021; Mosadeghrad, 2022). Among these dimensions, responsiveness and empathy are consistently identified as the most significant predictors of patient satisfaction, particularly in both inpatient and outpatient settings (Ahmed et al., 2020; Choi et al., 2024). Effective communication and respectful interactions between healthcare providers and patients have been shown to enhance trust, emotional comfort, and overall satisfaction.

Despite advancements in healthcare systems, many hospitals continue to face challenges related to service efficiency and the implementation of patient-centered care. Issues such as long waiting times, limited transparency of information, and inconsistent service delivery remain common sources of patient dissatisfaction, particularly in developing and transitional healthcare systems (Atinga et al., 2022; Nguyen et al., 2023). These challenges highlight the need for continuous monitoring and systematic evaluation of patient satisfaction as part of ongoing quality improvement initiatives.

Several previous studies have examined patient satisfaction in the hospital context using the SERVQUAL approach (Rahardjo et al., 2025; Rahmatia et al., 2025). This study integrates SERVQUAL gap analysis with a priority-based improvement approach to identify service deficiencies and establish managerial priorities based on patient expectations and perceived service performance. In fact, research by Awwad et al. (2024) explains that listening to customers is only part of determining critical success factors. Organizations must consider customer feedback as an essential component. Patient feedback provides valuable information for hospital service improvement. Incorporating this feedback into managerial decisions helps identify service deficiencies and establish appropriate improvement priorities. This study develops a model that investigates patient satisfaction to fill this gap, with the novelty of integrating SERVQUAL with a priority-based improvement model.

Therefore, this study aims to analyze patient satisfaction with hospital services by examining key dimensions of service quality. By exploring patients' perceptions and experiences, this research seeks to provide empirical evidence on the factors influencing patient satisfaction. The findings are expected to assist hospital management in developing evidence-based strategies to enhance service quality, strengthen patient-centered care, and ultimately improve overall hospital performance.

METHOD

This study employed a quantitative research design with a cross-sectional approach to analyze patient satisfaction with hospital services. Quantitative methods are widely utilized in

healthcare service research as they enable the objective measurement of patients' perceptions and facilitate statistical analysis of relationships among variables (Sekaran & Bougie, 2020). A cross-sectional design was adopted because data were collected at a single point in time, allowing the study to capture patients' current experiences and satisfaction levels.

The population of this study comprised patients who received both inpatient and outpatient services at the hospital during the study period. The sample was selected using purposive sampling, targeting patients who had completed their treatment and were therefore able to provide an informed evaluation of the services received. This sampling technique is considered appropriate in patient satisfaction studies, as respondents must have direct experience with the services being assessed (Etikan et al., 2021).

The minimum sample size was determined based on established recommendations for multivariate analysis, which emphasize the need for an adequate number of observations to ensure statistical robustness and reliability (Hair et al., 2021). Only respondents who met predefined inclusion criteria such as appropriate age, mental readiness, and willingness to participate were included in the study.

Primary data were collected using a structured questionnaire developed based on established literature on healthcare service quality and patient satisfaction. The questionnaire consisted of two main sections: respondents' demographic characteristics and patient satisfaction indicators. Satisfaction was measured using widely recognized service quality dimensions derived from the SERVQUAL model, including reliability, responsiveness, assurance, empathy, and tangibles (Mosadeghrad, 2022; Purcărea et al., 2021). All responses were measured using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The Likert scale is widely acknowledged as an effective instrument for capturing attitudes and perceptions in healthcare service research (Joshi et al., 2020).

To ensure the quality of the measurement instrument, both validity and reliability tests were conducted. Construct validity was assessed through correlation analysis and factor loadings, while reliability was evaluated using Cronbach's alpha coefficient. In line with established methodological standards, a Cronbach's alpha value of 0.70 or higher indicates acceptable internal consistency (Hair et al., 2021). These procedures were essential to ensure that the instrument accurately measured patient satisfaction and produced consistent and reliable results.

Data analysis was conducted using both descriptive and inferential statistical techniques. Descriptive analysis was used to summarize respondents' characteristics and overall satisfaction levels, while inferential analysis was performed to examine the influence of service quality dimensions on patient satisfaction. Data were analyzed using descriptive statistics, validity and reliability testing, factor analysis, SERVQUAL gap analysis, and weighted gap analysis. These procedures were used to evaluate the measurement instrument, examine service quality dimensions, and establish priorities for hospital service improvement. The application of statistical analysis in patient satisfaction research enables healthcare managers to identify priority areas for service improvement and supports evidence-based decision-making (Nguyen et al., 2023).

Ethical considerations were strictly observed throughout the study. Participation was entirely voluntary, and informed consent was obtained from all respondents prior to data collection. The anonymity and confidentiality of respondents were fully maintained in accordance with ethical guidelines for health research recommended by the World Health Organization (WHO, 2020). Adherence to these ethical principles ensures the protection of participants' rights and enhances the credibility and integrity of the research findings.

RESULTS AND DISCUSSION

The adjusted respondent profile indicates that the majority of patients were middle-aged, female, and had experienced a moderate length of hospital stay. This demographic composition

is appropriate for patient satisfaction analysis, as the respondents had sufficient interaction with hospital services to provide well-informed and reliable evaluations.

Table 1. Respondent Profile

No.	Category	Frequency (n)	Percentage (%)
1	Group 1	359	24.327
2	Group 2	355	21.976
Total		371	100.000

Most respondents were aged 36–45 years (27.4%), indicating that the majority of patients belonged to the middle-aged group, which typically represents active users of healthcare services. Female patients constituted a higher proportion of respondents (55.7%), suggesting that women were more likely to utilize hospital services or to participate in satisfaction surveys. Additionally, the majority of patients (35.7%) had a length of stay of 3–4 days, indicating that most treatments required short to moderate hospitalization periods. This study also provides a clear explanation of the operational parameters used in the research. Data were collected using a structured questionnaire based on service quality dimensions derived from the SERVQUAL model and their corresponding indicators. To ensure clarity and consistency in the research framework, each dimension and its indicators were systematically defined and applied as measurement variables in the analysis.

Table 2. Indicators of Health Service Quality Variables Using the SERVQUAL Model

Dimension	Code	Indicator
Tangibles	x1	Cleanliness of hospital rooms
	x2	Availability of adequate medical equipment
	x3	Comfort of waiting rooms
	x4	Cleanliness of toilets and public facilities
	x5	Availability of parking spaces
	x6	Neat and professional appearance of medical staff
	x7	Availability of clear information boards and signage
	x8	Availability of supporting facilities (pharmacy, laboratory, prayer room)
	x9	Adequate air conditioning and ventilation system
	x10	Overall cleanliness and hygiene of the hospital environment
Reliability	x11	Accuracy of diagnosis and medical treatment
	x12	Timeliness of service delivery
	x13	Consistency of service according to hospital procedures
	x14	Accuracy in administrative and billing processes
	x15	Availability and accuracy of patient medical records
	x16	Ability of hospital staff to provide services as promised
Responsiveness	x17	Promptness of medical staff in responding to patient needs
	x18	Speed of handling patient complaints
	x19	Readiness of staff to assist patients

Dimension	Code	Indicator
	x20	Ease of contacting hospital staff
	x21	Clarity of information provided about medical procedures
	x22	Efficiency of service flow and administrative procedures
	x23	Availability of emergency response services
	x24	Competence of doctors and nurses
Assurance	x25	Professionalism of hospital staff
	x26	Patient confidence in the safety of medical procedures
	x27	Security and privacy protection of patient data
	x28	Guarantee of service quality in accordance with standards
	x29	Transparency of treatment costs
Empathy	x30	Friendliness of doctors and nurses
	x31	Individual attention given to patients
	x32	Willingness of staff to listen to patient concerns
	x33	Ease of consultation with doctors outside regular examination time (if needed)

In testing the validity of each item in the SERVQUAL consumer expectations questionnaire, the score of each item was correlated with the total score, which represents the sum of all item scores. According to Sugiyono (2010), items that demonstrate a positive and sufficiently high correlation with the total score are considered to have good validity. The minimum criterion for item validity is a correlation coefficient (r) of 0.30; therefore, any item with a correlation value below 0.30 is deemed invalid and should be excluded from the instrument.

The results of the first-stage validity test for the SERVQUAL questionnaire (consumer expectations) were evaluated using a critical r -value. This value was determined based on a sample size of $n = 230$, with degrees of freedom (df) = $n - 2 = 228$, and a significance level of 5%, resulting in a critical r -value of 0.131. This value represents an approximate threshold obtained through linear interpolation.

The first-stage testing results indicated that variable X28 had a correlation coefficient of $r = 0.092$, which is below the critical value ($r < 0.131$). Therefore, this item was considered invalid and removed from the instrument. Subsequently, a second-stage validity test was conducted without including this variable. The results of the second-stage validity testing, as presented in Table 3, show that all remaining variables have correlation coefficients exceeding the critical r -value, indicating that all items are valid and suitable for further analysis.

Table 3. Results of the Validity Test of the Consumer Expectations Questionnaire (Phase II)

Variable	Correlation (r)	Variable	Correlation (r)	Variable	Correlation (r)
x1	0.340	x12	0.511	x23	0.662
x2	0.342	x13	0.520	x24	0.644
x3	0.308	x14	0.563	x25	0.576
x4	0.552	x15	0.565	x26	0.586
x5	0.413	x16	0.615	x27	0.558

Variable	Correlation (r)	Variable	Correlation (r)	Variable	Correlation (r)
x6	0.676	x17	0.413	x29	0.534
x7	0.407	x18	0.608	x30	0.486
x8	0.585	x19	0.656	x31	0.509
x9	0.522	x20	0.628	x32	0.618
x10	0.364	x21	0.632	x33	0.632
x11	0.514	x22	0.587		

The results of the first-stage validity test of the SERVQUAL questionnaire on consumer perceptions were evaluated using a critical r-value obtained based on $n = 230$, degrees of freedom (df) = $n - 2 = 228$, and a significance level of 5%, resulting in a critical value of 0.131. This value represents an approximate threshold derived through linear extrapolation. The findings from the initial testing stage indicated that five variables had correlation coefficients below the critical r-value and therefore had to be excluded from the instrument. These variables were X1 ($r = 0.103$), X5 ($r = 0.072$), X9 ($r = 0.028$), X26 ($r = 0.082$), and X27 ($r = 0.066$). Consequently, a second-stage validity test was conducted after removing these items.

The results of the second-stage testing revealed that one additional variable still had a correlation coefficient below the critical threshold, namely X2 ($r = 0.100$). As a result, this variable was also excluded, and a third-stage validity test was performed. The final results of the third-stage validity testing, as presented in Table 4, indicate that all remaining variables have correlation coefficients exceeding the critical r-value, confirming that all items are valid and suitable for further analysis.

Table 4. Results of the Validity Test of the Consumer Perception Questionnaire (Phase III)

Variable	Correlation (r)	Variable	Correlation (r)	Variable	Correlation (r)
x3	0.200	x12	0.171	x23	0.370
x4	0.150	x13	0.407	x24	0.419
x6	0.156	x14	0.274	x25	0.567
x7	0.198	x15	0.435	x28	0.390
x8	0.263	x16	0.414	x29	0.208
x10	0.276	x17	0.213	x30	0.170
x11	0.183	x18	0.446	x31	0.318
		x19	0.255	x32	0.432
		x20	0.425	x33	0.196
		x21	0.500		
		x22	0.506		

Reliability analysis was conducted to assess the consistency of the measurement instrument in capturing the intended constructs. Reliability was assessed using Cronbach's alpha coefficient, with calculations performed using IBM SPSS Statistics version 21.0. The results showed that the SERVQUAL consumer expectations questionnaire achieved a Cronbach's Alpha value of $\alpha = 0.893$ in Phase I and $\alpha = 0.934$ in Phase II. Meanwhile, the consumer perception questionnaire yielded $\alpha = 0.781$ in Phase I, $\alpha = 0.789$ in Phase II, and $\alpha = 0.798$ in Phase III. Based on Guilford's criteria (1956), an instrument is considered reliable if

it has an alpha value greater than 0.70. Therefore, both the consumer expectations and consumer perception questionnaires can be regarded as reliable instruments.

Factor analysis was subsequently applied to reduce the number of variables and to identify underlying dimensions. This method also serves as a tool for evaluating construct validity, as it assesses the extent to which observed variables represent the latent constructs they are intended to measure. Factor analysis was conducted only on variables from the consumer expectations questionnaire that had already met validity and reliability requirements, as these variables reflect the factors influencing patient satisfaction.

Prior to conducting factor analysis, several assumption tests were performed to ensure the suitability of the data. These included the determinant of the correlation matrix, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, and Bartlett's Test of Sphericity. The determinant of the correlation matrix indicates whether the matrix can be inverted. A determinant value of zero would prevent factor extraction from being performed. In this study, the determinant value was 1.99×10^{-7} , indicating that the matrix is suitable for factor analysis and that factor extraction can be conducted.

The KMO statistic measures the proportion of variance among variables that may be attributed to underlying common factors. The obtained KMO value was 0.893, which is close to 1 and exceeds the minimum acceptable threshold of 0.50. This result confirms that the data are adequate for factor analysis. Bartlett's Test of Sphericity evaluates the strength of relationships among variables. A lower significance level indicates stronger correlations. The test results showed a significance value of 0.000, suggesting that the correlations among variables are sufficiently strong to justify the application of factor analysis.

The results of factor grouping are presented in Table 5, which includes rotated factor loadings and communality values for each variable. The rotation results indicate that five factors were extracted, corresponding to the underlying constructs of service quality. Variables were assigned to factors based on the highest loading values, and each factor was subsequently named according to the characteristics of the variables it represents.

Table 5. Significant Factor Loadings and Communality Values

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality	Dimension
x1	0.055					0.6094	Tangibles
x2	0.083					0.5271	
x3	0.069					0.6521	
x4	0.448					0.6136	
x5	0.347					0.6307	
x6	0.618					0.6260	
x7	0.053					0.2917	
x8	0.529					0.6304	
x9	0.544					0.6287	
x10	0.082					0.6698	
x11	0.036					0.6440	
x12		0.114				0.3900	Reliability
x13		0.232				0.5338	
x14		0.065				0.6013	
x15		0.202				0.4817	
x16		0.023				0.7493	

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality	Dimension
x17		0.519				0.4480	Responsiveness
x18		0.491				0.5888	
x19		0.600				0.5911	
x20		0.484				0.5943	
x21		0.474				0.6446	
x22		0.343				0.6007	
x23		0.279				0.6460	
x24			0.058			0.6950	Assurance
x25			0.002			0.6010	
x26			0.114			0.5600	
x27			0.043			0.6240	
x29			0.010			0.5600	
x30				0.292		0.7000	Empathy
x31				-0.067		0.6850	
x32				0.361		0.5770	
x33				0.599		0.6740	

The results of the analysis indicate that Factor 1 is primarily composed of quality variables X1 through X11, which collectively form the Tangibles construct. Meanwhile, Factors 2, 3, 4, and 5 are predominantly represented by variables corresponding to the Reliability, Responsiveness, Assurance, and Empathy dimensions, respectively. A more detailed description of these five factors and their corresponding components is presented in Table 4.14.

The communality values reflect the proportion of variance in each variable that is explained by the extracted factors. In general, communality values below 0.50 suggest that the variables are not sufficiently explained by the factor solution. Based on the results shown in Table 5, five variables have communality values below this threshold. However, several variables exhibited communality values below 0.50, indicating that the extracted factors explained a relatively limited proportion of their variance. These variables require further examination before the adequacy of the factor solution can be established.

Table 6. Formed Factors and Their Constituent Variables

Factor	Construct	Manifest Variables
1	Tangibles	x1, x2, x3, x4, x5, x6, x7, x8, x9, x10, x11
2	Reliability	x12, x13, x14, x15, x16
3	Responsiveness	x17, x18, x19, x20, x21, x22, x23
4	Assurance	x24, x25, x26, x27, x29
5	Empathy	x30, x31, x32, x33

Gap analysis was performed to identify variables that require priority attention based on their high gap values. Table 7 presents the variables that have been confirmed as valid and reliable for measuring patient expectations and perceptions of hospital service quality, along with their corresponding SERVQUAL scores. A negative SERVQUAL score indicates that

patients are dissatisfied with the level of service provided, whereas a positive score reflects patient satisfaction with the service performance.

Table 7. Calculation of SERVQUAL Scores

Variable	Perception Mean	Perception SD	N	Expectation Mean	Expectation SD	N	SERVQUAL Score
x3	39.565	0.2044	230	36.826	0.5280	230	0.2739
x4	32.435	0.4872	230	36.957	0.5397	230	-0.4522
x6	32.783	0.6135	230	35.870	0.5975	230	-0.3087
x7	34.565	0.4992	230	35.696	0.5465	230	-0.1130
x8	33.043	0.4705	230	35.957	0.5584	230	-0.2913
x10	34.435	0.4979	230	32.304	0.6013	230	0.2130
x11	33.913	0.4891	230	34.783	0.5888	230	-0.0870
x12	34.609	0.4996	230	37.696	0.4709	230	-0.3087
x13	34.957	0.5011	230	33.435	0.5979	230	0.1522
x14	34.826	0.5008	230	36.739	0.5142	230	-0.1913
x15	35.565	0.4979	230	34.783	0.5962	230	0.0783
x16	37.043	0.4573	230	35.652	0.6147	230	0.1391
x17	34.826	0.5008	230	35.609	0.5146	230	-0.0783
x18	36.304	0.4837	230	35.217	0.5962	230	0.1087
x19	33.696	0.4837	230	34.522	0.6233	230	-0.0826
x20	35.087	0.5010	230	34.739	0.6033	230	0.0348
x21	35.696	0.4962	230	34.957	0.6321	230	0.0739
x22	36.739	0.4698	230	35.217	0.6035	230	0.1522
x23	35.957	0.4918	230	36.217	0.5611	230	-0.0261
x24	37.391	0.4401	230	36.522	0.6063	230	0.0870
x25	35.913	0.4927	230	34.870	0.5428	230	0.1043
x29	34.870	0.5009	230	36.348	0.5341	230	-0.1478
x30	33.913	0.4891	230	36.783	0.4865	230	-0.2870
x31	34.130	0.4935	230	35.130	0.5096	230	-0.1000
x32	35.304	0.5002	230	36.217	0.5840	230	-0.0913
x33	34.913	0.5010	230	35.913	0.5745	230	-0.1000

Based on the SERVQUAL score calculations presented in Table 7, a total of 11 variables have met patient expectations, namely: x3, x10, x13, x15, x16, x18, x20, x21, x22, x24, and x25. In contrast, several variables indicate unmet expectations, reflecting patients' perceptions of inadequate service quality. These include x4, x6, x7, x8, x11, x12, x14, x17, x19, x23, x29, x30, x31, x32, and x33. The significance test for negative SERVQUAL scores is presented in Table 8. The results indicate that 13 variables have SERVQUAL scores that require particular attention. Accordingly, these variables were included in the weighted gap analysis as a basis for determining the priority of corrective actions.

Table 8. Calculation of Significance Level ($\alpha = 0.05$)

Variable	Perception Mean	Perception SD	Expectation Mean	Expectation SD	t- value	t'- value	Remark
x4	32.435	0.4872	36.957	0.5397	16.450	94.316	Significant
x6	32.783	0.6135	35.870	0.5975	16.450	54.666	Significant
x7	34.565	0.4992	35.696	0.5465	16.450	23.163	Significant
x8	33.043	0.4705	35.957	0.5584	16.450	60.504	Significant
x11	33.913	0.4891	34.783	0.5888	16.450	17.229	Significant
x12	34.609	0.4996	37.696	0.4709	16.450	68.192	Significant
x14	34.826	0.5008	36.739	0.5142	16.450	40.422	Significant
x17	34.826	0.5008	35.609	0.5146	16.450	16.529	Significant
x19	33.696	0.4837	34.522	0.6233	16.450	15.878	Not Significant
x23	35.957	0.4918	36.217	0.5611	16.450	0.5302	Not Significant
x29	34.870	0.5009	36.348	0.5341	16.450	30.617	Significant
x30	33.913	0.4891	36.783	0.4865	16.450	63.087	Significant
x31	34.130	0.4935	35.130	0.5096	16.450	21.380	Significant
x32	35.304	0.5002	36.217	0.5840	16.450	18.009	Significant
x33	34.913	0.5010	35.913	0.5745	16.450	19.895	Significant

Variables that demonstrate significant differences, as presented in Table 8, are further analyzed through weighted gap calculations. These calculations serve as the basis for determining the priority of hospital service improvement initiatives, as outlined in Table 9 below.

Table 9. Weighted Gap Calculation for Each Variable

Dimension	Code	Quality Variable	SERVQUAL Score	Importance Level	Weighted Gap
Tangibles	x4	Cleanliness of toilets and public facilities	0.4522	278.261	125.822
	x6	Neat and professional appearance of medical staff	0.3087		85.898
	x7	Availability of clear information boards and signage	0.1130		31.456
	x8	Availability of supporting facilities (pharmacy, laboratory, prayer room)	0.2913		81.059
	x11	Accuracy of diagnosis and medical treatment	0.0870		24.197
Reliability	x12	Timeliness of service delivery	0.3087	244.130	75.362

Dimension	Code	Quality Variable	SERVQUAL Score	Importance Level	Weighted Gap
Responsiveness	x14	Accuracy in administrative and billing processes	0.1913		46.703
	x17	Promptness of medical staff in responding to patient needs	0.0783	177.435	13.886
	x29	Transparency of treatment costs	0.1478	159.950	23.645
Assurance	x30	Friendliness of doctors and nurses	0.2870	140.217	40.236
Empathy	x31	Individual attention given to patients	0.1000		14.022
	x32	Willingness of staff to listen to patient concerns	0.0913		12.802
	x33	Ease of consultation with doctors outside regular examination time (if needed)	0.1000		14.022

Priority levels for improvement represent a structured approach used to identify, rank, and address areas that require enhancement based on their relative importance and impact on organizational performance. This approach enables decision makers to allocate limited resources more effectively by focusing on the most critical issues first to achieve optimal outcomes. In practice, priority levels are determined by integrating two key dimensions: importance and performance. Importance reflects how essential a particular service attribute is to patients, while performance indicates how well the hospital currently delivers that service. By examining the gap between these two dimensions, priority areas that require immediate attention can be identified.

Based on this framework, the highest priority, categorized as very high priority or critical improvement, includes variables with the largest weighted gaps. These aspects are highly important to patients but show substantial performance deficiencies. The cleanliness of toilets and public facilities (Tangible – x4) emerges as the most critical factor, indicating that hygiene is a major concern affecting patient satisfaction. This finding suggests the need for immediate corrective actions, such as improving cleaning schedules, strengthening supervision, and ensuring proper facility maintenance. In addition, the timeliness of service delivery (Reliability – x12) is identified as another critical issue. Delays in service provision can significantly reduce patient trust and satisfaction; therefore, improvements in scheduling systems, workflow efficiency, and staff coordination should be prioritized.

The next category, high priority or urgent improvement, includes variables that strongly influence patient perceptions and require prompt attention, although they are slightly less critical than the first group. These include the neat and professional appearance of medical staff (Tangible – x6), which plays an important role in shaping patients' first impressions and confidence in service quality. The availability of supporting facilities such as pharmacies, laboratories, and prayer rooms (Tangible – x8) is also essential, as it directly affects patient comfort and the completeness of services. Furthermore, the accuracy of administrative and billing processes (Reliability – x14) is crucial, since inefficiencies or errors in these processes

may lead to dissatisfaction and reduced trust. Improvements in these areas can be achieved through standardization, system enhancement, and staff training.

The medium priority category includes factors that remain important but have relatively smaller weighted gaps. For example, the friendliness of doctors and nurses (Empathy – x30) contributes to patient satisfaction through positive interpersonal interactions, although it is generally perceived as adequate. Similarly, transparency of treatment costs (Assurance – x29) helps reduce patient uncertainty and strengthens trust in the hospital, indicating the need for continued improvement in communication and information disclosure.

Finally, the low priority category consists of variables with relatively small weighted gaps, suggesting that current performance is already acceptable. These include the promptness of staff response (Responsiveness – x17), the accuracy of diagnosis and treatment (x11), the availability of clear information boards and signage (x7), and aspects of empathy such as individual attention, willingness to listen, and ease of consultation (x31, x32, x33). Although these factors do not require immediate intervention, continuous monitoring and maintenance are necessary to sustain service quality and prevent future declines in patient satisfaction. In conclusion, the findings indicate that improvements in facility cleanliness and service timeliness should be the primary focus, followed by enhancements in staff professionalism, supporting facilities, and administrative accuracy. Addressing these priority areas is expected to generate the greatest impact on overall patient satisfaction and hospital service performance.

Discussion

This study highlights that patient satisfaction is significantly shaped by multiple dimensions of service quality, as outlined in the SERVQUAL framework. The findings reveal persistent gaps between patient expectations and perceived service performance across several key attributes, particularly within the dimensions of tangibles, reliability, and empathy. These results support the view that patient satisfaction is a multidimensional construct influenced by both technical and functional aspects of healthcare delivery (Mosadeghrad, 2022). These findings can be compared with those of Deswita Mrp et al. (2025), who examined the relationship between SERVQUAL dimensions and patient satisfaction in Indonesia. Their study identified empathy as the strongest predictor, followed by assurance and responsiveness among BPJS patients. This suggests that although assurance and responsiveness are important, the dominance of these dimensions may vary depending on contextual factors such as patient expectations, cultural background, and type of healthcare services. In more relational healthcare settings, emotional aspects like empathy may outweigh technical competence.

The most pronounced service gap was identified in the cleanliness of toilets and public facilities, emphasizing the critical role of the physical environment and hygiene in determining patient satisfaction. Previous research has consistently shown that hospital cleanliness strongly influences patients' perceptions of safety, comfort, and overall service quality (Alrawadieh et al., 2020; Purcărea et al., 2021). In the post-pandemic era, patients are increasingly sensitive to environmental hygiene, making cleanliness an essential requirement rather than an added value (Choi et al., 2024).

Another key finding concerns the timeliness of service delivery, which exhibited a substantial weighted gap within the reliability dimension. Delays in treatment, administrative procedures, and service processes have been widely recognized as factors that negatively affect patient satisfaction and trust in healthcare providers (Atinga et al., 2022). Recent studies conducted between 2021 and 2025 further confirm that waiting time is one of the most common sources of dissatisfaction in hospital services, regardless of clinical outcomes (Nguyen et al., 2023; Ahmed et al., 2024). This suggests that operational efficiency is just as important as clinical competence in shaping patient experiences.

The tangibles dimension, particularly the professional appearance of medical staff and the availability of supporting facilities, also showed notable gaps. These findings are consistent

with recent studies indicating that visible service elements such as staff appearance, signage, and facility completeness serve as important cues in patients' assessments of service quality (Xesfingi & Vozikis, 2020; Gleeson et al., 2023). When these aspects do not meet expectations, patients may question the hospital's overall professionalism and reliability. Sugianto et al. (2025) identified tangibles as an important determinant of patient satisfaction, highlighting the role of cleanliness, equipment quality, and facility comfort in shaping patients' perceptions of hospital service quality. This supports the current finding that improving physical facilities such as those recommended for Sylvani Hospital is essential.

Within the empathy dimension, variables related to friendliness, individual attention, and willingness to listen recorded negative SERVQUAL scores. This finding reinforces the growing body of evidence that interpersonal communication and emotional support are central to patient-centered care (Batbaatar et al., 2021). Empathy has been identified as a strong determinant of patient satisfaction, trust, and treatment adherence, particularly in inpatient and long-term care contexts (Cheng et al., 2025). Even when clinical outcomes are favorable, poor interpersonal interactions can significantly reduce patients' overall perceptions of care quality.

Although the responsiveness and assurance dimensions demonstrated relatively smaller gaps, they remain essential for maintaining patient satisfaction. Studies published after 2020 suggest that these dimensions often function as "hygiene factors," meaning their absence leads to dissatisfaction, while their presence alone may not be sufficient to generate high levels of satisfaction (Mosadeghrad, 2022; Al-Saadi et al., 2026). Therefore, ongoing monitoring and gradual improvements in these areas are still necessary.

Overall, the findings are consistent with recent research indicating that patient satisfaction is influenced by a combination of structural quality, service efficiency, and interpersonal interaction (Purcărea et al., 2021; Nguyen et al., 2023). The application of weighted gap analysis in this study offers a practical tool for hospital management by linking service performance deficiencies with patient-perceived importance, thereby supporting more effective and evidence-based decision-making.

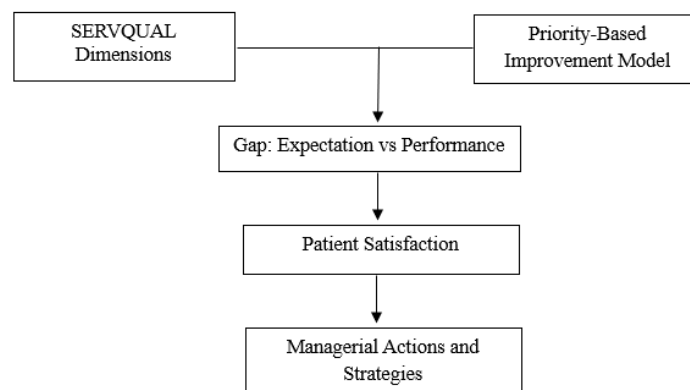


Figure 1. Conceptual Model of Patient Satisfaction Based on SERVQUAL and Priority-Based Improvement

CONCLUSION

This study concludes that the quality of hospital services plays a significant role in shaping patient satisfaction, with clear gaps identified between patient expectations and perceived performance across several SERVQUAL dimensions. The findings demonstrate that patient satisfaction is influenced not only by clinical outcomes but also by service delivery processes, physical infrastructure, and the quality of interpersonal interactions. The most critical areas requiring immediate attention are the cleanliness of toilets and public facilities and the timeliness of service delivery, as these variables recorded the highest weighted gaps. These results are in line with previous studies indicating that hygiene conditions and waiting time are

among the primary determinants of patient dissatisfaction in hospital environments (Thomas, 2020; Atinga et al., 2022).

Other high-priority areas for improvement include the professional appearance of medical staff, the availability of supporting facilities, and the accuracy of administrative and billing processes. Addressing these aspects is essential to strengthen patients' perceptions of professionalism, operational efficiency, and fairness in healthcare services (Gleeson et al., 2023; Ahmed et al., 2024). Moderate improvement efforts should focus on enhancing empathy-related aspects, such as friendliness, individualized attention, and the willingness of staff to listen to patients. Empathy has been widely acknowledged as a core element of patient-centered care and a key factor in building trust and long-term patient satisfaction (Batbaatar et al., 2021; Cheng et al., 2025).

From a managerial standpoint, hospital administrators are encouraged to implement targeted improvement strategies in areas with the largest service gaps in order to maximize the effectiveness of quality enhancement initiatives (Thomas, 2020). Such strategies may include improving facility maintenance systems, optimizing service scheduling and workflow coordination, strengthening staff training in communication and interpersonal skills, and increasing transparency in cost information (Nguyen et al., 2023).

This study contributes to the existing literature on healthcare service quality by reaffirming the continued relevance of the SERVQUAL model in modern hospital settings and by incorporating weighted gap analysis as a practical tool for prioritization. Nevertheless, the study has limitations, particularly its cross-sectional design and focus on a single institution. Future research is recommended to adopt longitudinal designs, include multiple hospitals, and incorporate additional outcome variables such as patient loyalty and clinical effectiveness to provide a more comprehensive understanding of service quality dynamics (Al-Saadi et al., 2026). In conclusion, continuous evaluation and strategic improvement of service quality dimensions are essential for hospitals seeking to enhance patient satisfaction, build patient trust, and achieve sustainable performance in an increasingly competitive and patient-centered healthcare environment.

Theoretical Contribution

This study contributes to the existing literature by developing an integrated conceptual model that links SERVQUAL dimensions with a priority-based improvement approach. Unlike prior studies that primarily focus on measuring service quality gaps, this research extends the analysis by incorporating weighted gap evaluation to systematically identify and rank critical service attributes that require immediate managerial attention. This integration enables a more strategic and actionable framework for improving patient satisfaction, bridging the gap between measurement and decision-making in healthcare service management.

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