Construct Development and Validation of Service Quality in the Context of Private Hospitals

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ABSTRACT:

This study focused on creating and validating a culturally sensitive instrument for measuring service quality in private hospitals in Region XII of the Philippines, addressing the limitations of traditional Western-centric models like SERVQUAL. Utilizing a sequential exploratory mixed-methods approach, a comprehensive literature review and initial in-depth interviews with patient attendants and hospital administrators led to the development of 60 preliminary items that highlighted culturally relevant dimensions. Expert assessments confirmed the validity of the content, while exploratory factor analysis (n = 255) revealed six essential dimensions of service quality: Service Reliability, Empathic Communication, Tangible Accessibility, Participative Engagement, Service Responsiveness, and Service Consistency, resulting in a model that retained 37 items. Further validation through confirmatory factor analysis (n = 370) confirmed the construct validity and model fit of the scale. The final model comprised a two-dimensional, 12-item scale, resulting in a robust tool for assessing service quality in private healthcare settings. This tool has significant implications for hospital administrators and policymakers. The study supports efforts to enhance patient care, promote cultural responsiveness, and align with Sustainable Development Goals related to health and inclusive service systems in developing regions.

Keywords*:* Construct Validation, Exploratory Factor Analysis, Private Hospitals, Service Quality, Sequential Exploratory Mixed-methods

INTRODUCTION

In the evolving landscape of healthcare delivery, patient satisfaction has emerged as a crucial indicator of healthcare quality and overall effectiveness of healthcare institutions (Baía and Baptista, 2020, p. 1; Wirtz, 2021; Friedel et al., 2023, p. 1). As patient expectations increase, private hospitals are pressured to adopt the best practices to enhance service quality and improve patient outcomes. However, measuring patient satisfaction poses considerable challenges owing to the variability of experiences influenced by personal, cultural, and situational factors inherent to healthcare environments.

Existing methodologies for assessing service quality often fail to address the specific requirements of patients in private healthcare systems, particularly in developing regions. Widely utilized frameworks, such as Service Quality (SERVQUAL) and Service Performance (SERVPERF), exhibit substantial limitations in culturally diverse contexts (Endeshaw, 2021, p. 114; Swain and Kar, 2018, p. 262). These models, primarily constructed based on Western paradigms, may inadequately reflect healthcare practices, cultural norms, and the critical nature of familial involvement, especially relevant in countries like the Philippines (Castillo, 2018, p. 74). The absence of a comprehensive, culturally pertinent framework for evaluating service quality in private hospitals can erode patient trust, impede competitiveness, and contribute to suboptimal health care outcomes.

Existing literature indicates that standardized models of patient satisfaction often overlook critical factors specific to private healthcare settings (Bozkurt and Kiliçarslan, 2021, p. 21; Khrestianto et al., 2020, p. 3213; Endeshaw, 2021, p. 110). Of the 1195 privately-owned healthcare facilities in the Philippines, 772 are hospitals (Philippine Statistics Authority, 2022). Private hospitals face numerous challenges, including funding constraints, organizational dynamics, and regulatory compliance. These issues heighten competition and lead

to increased patient complaints and dissatisfaction. Unlike public hospitals, private healthcare organizations operate in a competitive marketplace, where the quality of service significantly impacts patient loyalty, institutional reputation, and financial viability.

Private hospitals generally achieve higher patient satisfaction rates compared to public facilities, particularly in areas such as responsiveness and empathy (Kwateng et al., 2017, p. 6). Research indicates that perceived service quality in private hospitals is around 15% greater than in public hospitals (Swain, 2019, p. 254; Mutiarasari et al., 2021, p. S188). This disparity emphasizes the urgent need for a new service quality evaluation scale that integrates universally recognized healthcare quality principles with culturally specific considerations. The ongoing population growth and urbanization demand a tailored assessment tool for private hospitals in Region XII. Additionally, the COVID-19 pandemic, which coincided with the 2020 census, highlighted existing challenges in the healthcare system, further emphasizing the necessity for improved service evaluation grounded in empirical data.

This study aimed to address the lack of localized tools for evaluating service quality in private hospitals, making Region XII a critical focus for healthcare improvement. By addressing the shortcomings of existing assessment models and incorporating the local dynamics of healthcare services, this study seeks to enhance assessments of service quality, improve patient satisfaction, and refine management strategies in private hospitals.

The primary goal of this study was to develop and validate a new measurement scale for service quality, specifically designed for private hospitals in Region XII. By incorporating cultural and regional elements into established service quality frameworks, this study aims to provide a more nuanced and patient-centered approach. The specific objectives included (1) identifying the key service quality dimensions relevant to private hospitals in Region XII, (2) developing a service quality scale in private hospitals, and (3) validating the developed service quality scale.

Furthermore, it adds to the ongoing discussion on improving healthcare quality in accordance with the Sustainable Development Goal (SDG) to ensure good health and well-being. It also supports sustainable economic growth, decent work, and the development of sustainable cities and communities (UNICEF 2023). Through a comprehensive validation process, this study seeks to offer a solid, evidence-based framework for healthcare practitioners, policymakers, and academic researchers.

Research by Mutiarasar et al. (2021, p. S188) highlights the critical role of patient satisfaction as a key metric for assessing healthcare services, revealing significant disparities between public and private hospitals in less developed countries. Their study indicates that private facilities, which report higher patient satisfaction scores, have a 15% readmission rate, with 23% of patients returning for further care and 30% experiencing improved health outcomes. Complementing their findings, Ali et al. (2021, p. 15) analyzed private hospitals and identified that technical quality accounts for 45% of patient satisfaction variance, while interpersonal interactions and the physical environment contribute 35% and 20%, respectively. Similarly, Nguyen et al. (2021, p. 2533) conducted a mixed-methods investigation in private hospitals within developing countries, reinforcing the impact of technical quality on patient satisfaction (42% of variance) and emphasizing the importance of interpersonal aspects (38%) and environmental factors (20%). Their research underscores the need for context-specific indicators in evaluating service quality, demonstrating a significant correlation between service quality attributes and patient satisfaction ($r = 0.78$, $p < 0.001$), as well as perceptions of quality and patient loyalty ($r = 0.65$, $p < 0.001$). Furthermore, a positive relationship exists between the service environment and overall satisfaction ($r = 0.52$, $p < 0.001$).

In private healthcare institutions, customer perceptions of quality play a vital role in shaping a hospital's reputation, as hospitals with a positive image are more likely to be associated with valuable services (Sugianto et al., 2020, p. 2523). A strong brand image reflects a commitment to continuous improvement in service quality, leading patients to prefer such hospitals. Research by Javed and Ilyas (2018) and Chakraborty et al. (2021) highlights the importance of evaluating patient satisfaction to maintain a competitive edge, emphasizing that unique service delivery, market positioning, patient retention, and efficient resource utilization are essential for enhancing satisfaction. Despite numerous studies targeted at improving healthcare service quality,

especially in critical areas, there is a lack of a comprehensive framework that integrates all aspects of service quality management in hospitals. Furthermore, many existing methodologies for measuring healthcare service quality have primarily focused on developing nations and often overlook the unique expectations and perceptions of patients in diverse contexts. This highlights the urgent need for a personalized approach to assessing healthcare quality that aligns with the specific demands and standards of the local population.

Context-specific models are urgently required. Established service quality frameworks, such as SERVQUAL, often fail to address the distinctive challenges confronting the healthcare sectors in developing nations (Swain and Kar, 2018, p. 262; Endeshaw, 2021, p. 114). Therefore, it is imperative to develop a tailored model that considers cultural, social, and economic factors influencing patient perceptions of service quality in these regions. Additionally, certain researchers have relied on models specifically crafted for healthcare environments (Yeboah and Dankwa, 2016, p. 50). Notably, despite the existence of numerous theoretical frameworks (Fatima et al., 2018, p. 1201; Swain and Kar, 2018, p. 262; Liu et al., 2021, p. 4; Nguyen et al., 2021, p. 2527; Panda et al., 2022, p. 1531; Friedel et al., 2023, p. 5) there remains a significant paucity of empirical studies validating these constructs within the healthcare sector, particularly in developing nations.

This research aims to address a significant gap in the existing literature by formulating and validating a construct for a healthcare service quality framework. The study adopts a holistic approach that integrates both qualitative and quantitative methodologies to strengthen the rigor and applicability of its findings within the healthcare domain. Despite notable advancements in medical technology and the proficiency of healthcare providers, a considerable gap remains in comprehending the effects of various dimensions of service quality on patient perceptions and overall satisfaction.

The measurement of service quality in healthcare institutions has long been a topic of discussion. Various studies have introduced different models to evaluate service quality in healthcare settings (Kalaja, 2023, p. 48; Swain and Kar, 2018, p. 262). Several of these models draw on the dimensions of the SERVQUAL framework, which is the most utilized model in Western regions (Javed and Ilyas, 2018, p. 493; Kwateng et al., 2017, p. 251; Singh and Prasher, 2017, p. 288; Ali et al., 2021b, p. 13; Endeshaw, 2021, p. 114).

Service Quality, commonly known as SERVQUAL, is a comprehensive framework developed by Parasuraman et al. in 1985, following extensive empirical research. Initially identifying ten dimensions of service quality, it was later refined in 1988 into five core factors: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. Tangibles encompass the physical elements of a service, such as facilities and equipment, while Reliability refers to performing the promised service consistently and accurately. Responsiveness reflects the willingness to assist customers promptly, Assurance involves the knowledge and courtesy of personnel in conveying trust, and Empathy signifies the provision of individualized attention. This refined framework has proven invaluable across various sectors for evaluating and enhancing service quality (Arul Oli and Dhanasekaran, 2021, p. 3579). Specifically designed to measure and compare the perceptions and expectations of external customers, SERVQUAL offers advantages over alternative quality assessment methods due to its strong reliability and validity, making it an effective tool for identifying organizational strengths and weaknesses in service delivery. Furthermore, the model allows for nuanced analysis based on demographic and psychological factors (KhanMohammadi et al., 2023, p. 8).

Despite its utility, SERVQUAL has been a subject of critical scrutiny, particularly concerning the loading of its indicators. As Endeshaw (2021, p. 114) examined, SERVQUAL often fails to address specific challenges of the healthcare sector, especially in developing countries. Notably, nine of the 22 variables demonstrated loadings that fell below the recommended threshold of 0.5. Recent studies have investigated the significance of SERVQUAL in patient satisfaction. Kalaja (2023, p. 43) identified that the primary determinants of patient satisfaction were patients' demographic characteristics, expectations, and experiences. Moreover, Hammanjoda and Singh (2024, p. 327) suggested the absence of causal relationships between patients' perceptions of quality service delivery and overall satisfaction with the service received. This finding highlights the necessity for further exploration and comprehension of findings within the SERVQUAL context. Furthermore, it is necessary to develop a customized model that considers the cultural, social, and economic factors that influence patient perceptions of service quality in these contexts (Swain and Kar, 2018, p. 264; Endeshaw, 2021, p. 114).

In addition to the SERVQUAL model, several other frameworks have been developed to assess healthcare service quality, including HEALTHQUAL, Public Hospital Quality Service Quality (PubHosQual), and HospitalQual (Endeshaw, 2021). HEALTHQUAL, introduced by Nemati et al. (2020), tailors the SERVQUAL framework for healthcare, identifying five key dimensions: Environment, Empathy, Efficiency, Effectiveness, and Efficacy. However, its applicability is limited in specialized fields like mental health and emergency care, where service attributes differ, and its standardized approach may lack cultural adaptability (Park et al., 2018). Aagja and Garg (2010) applied the PubHosQual model to enhance patient experience in India's public hospitals, consisting of 24 items across five dimensions. Although relevant in this specific context, it may overlook technical aspects of healthcare services. Similarly, the Hospital Qual model introduced by Itumalla et al. in 2014 employs the disconfirmation paradigm from SERVQUAL to monitor and enhance service quality; however, it is restricted to administrative staff in public healthcare organizations, failing to incorporate feedback from clients who have used the services.

Service quality is defined as the difference between anticipated and actual service delivery (Parasuraman et al., 1985, p. 41). Consumers' perceptions of service quality are significantly shaped by the gap between expected service (ES) and perceived service (PS). In this context, research by Jawaid et al. (2018, as cited in Kalaja, 2023, p. 46) illustrates that patients with lower expectations typically report higher satisfaction with their healthcare experiences. This phenomenon underscores the notion that the quality of a service is ultimately determined by the consumer's subjective evaluation of the rendered service (Wirtz, 2021). Expectancy-Value Theory (Wigfield and Eccles, 2000) has emerged as an essential framework for this discussion, focusing on the nuances of customer expectations and experiences (Spott, 2022). Additionally, customer perspectives have historically been underrepresented in the research. Several studies have primarily concentrated on the technical aspects of healthcare delivery, such as the qualifications of healthcare professionals and quality of medical equipment, often overlooking other critical elements that contribute to patient satisfaction (Pellekooren et al., 2021, p. 12). Furthermore, customer retention continues to pose a challenge in the service industry, where customer perception is a key determinant of satisfaction (Panda et al., 2022, p. 1535).

A comprehensive understanding of consumer expectations and needs is vital for success in today's competitive landscape (Singh and Prasher, 2017, p. 15). Filipino consumers exhibit unique characteristics that significantly influence their purchasing behavior. Their decision-making processes are shaped by various factors, including the opinions of family members, friends, relatives, and colleagues. Budget constraints also play a crucial role in purchasing decisions. Over time, these behaviors have evolved, reflecting contemporary philosophies influenced by diverse global cultures, including those from Asia, America, and Europe (Castillo, 2018, p. 74).

Previous research has predominantly concentrated on the experiences and perceptions of patients, revealing a notable preference for hospital services due to the quality of care received. Alleviating symptoms emerges as a critical determinant of patient satisfaction, with successful recovery further enhancing the alignment between care perceptions and patient expectations (Ferreira et al., 2023, p. 641). In contrast, this study seeks to explore the perspectives of patient attendants during the hospital admission process. The influence of cultural and regional dimensions is paramount, as these dimensions encompass diverse values, beliefs, and practices that shape individual cognition, perception, and behavior. Employing Hofstede's cultural dimension framework, which delineates six fundamental dimensions, individualism-collectivism, power distance, uncertainty avoidance, masculinity-femininity, long-term versus short-term orientation, and indulgence-restraint (Żemojtel-Piotrowska and Piotrowski, 2023, p. 2), allows for a nuanced understanding of the cultural factors impacting management practices within organizations. Additionally, regional dimensions, which include geographical location, climate, historical context, economic development, political structures, social diversity, and language, further contribute to shaping these dynamics (Wale, 2024).

Region XII is characterized by its rich and diverse population, which includes several indigenous groups such as the *Tboli*, *B'laan*, and *Maguindanaoan*. Each group possesses distinctive cultural identities, traditions, and practices that are meticulously preserved and transmitted through generations (TourGuidePh 2025). The region is recognized for its wide array of cultural characteristics. Notably, even when healthcare professionals and patients share the same race, ethnicity, or national origin, divergence in their subcultural identities can still exist. These differences may significantly influence expectations and perceptions of service quality.

Satisfaction is posited to arise from a synthesis of beliefs, individual values concerning care, and expectations related to the service (Kalaja, 2023).

Nguyen et al. (2021, p. 2535) offered empirical insights into emergent concepts, emphasizing the considerable influence of cultural appraisals on assessment scores. Their findings indicate that prevailing geographical norms significantly affect patient experiences in healthcare settings, while local service performance standards are pivotal in determining patient satisfaction. Similarly, Endeshaw (2021, p. 114) highlighted the inadequacies of quality measurement instruments designed in Western contexts, questioning their applicability to healthcare services in developing nations. He advocated for the development of tailored models to assess the quality of healthcare services in these regions. Thus, when formulating a framework specific to a particular geographical or cultural area, it is essential to create instruments that can accurately assess the relationship between service quality and patient satisfaction.

The SERVQUAL model serves as the primary theoretical framework for this study, delineating service quality as a multifaceted construct characterized by five essential dimensions: reliability, assurance, tangibles, empathy, and responsiveness. This model has gained significant traction within healthcare settings for evaluating patients' perceptions of service quality (Swain and Kar, 2018, p. 3). Supporting this assertion, Darzi et al. (2022, p. 23) conducted a thorough analysis of 11 theoretical frameworks previously applied to assess service quality in healthcare institutions. Their research unveiled that fewer than 50% of the studies reviewed employed a recognized framework for measurement, while approximately 70% of the 32 articles analyzed utilized the SERVQUAL framework, originally developed by Parasuraman, Zeithaml, and Berry in 1988. This establishes SERVQUAL as the predominant service quality framework within the healthcare domain.

In addition to SERVQUAL, several other theoretical approaches have been applied over the last decade to evaluate the service quality in healthcare systems. These approaches include Total Quality Management (TQM), the fuzzy analytical hierarchy process, the Service Performance (SERVPERF) model, and the health monitoring indicator system (HMIS). Furthermore, Darzi et al. (2022, p. 25) proposed that the elements used to gauge perceived Service Quality in hospitals, drawing from theories that extend beyond the SERVQUAL model, can generally be categorized into the five dimensions identified within the SERVQUAL framework.

While models such as SERVQUAL and SERVPERF have been extensively applied in the healthcare sector, it is essential to consider nuances in private hospital environments. As defined by Parasuraman et al. (1988), SERVQUAL conceptualizes service quality as the gap between patients' expectations and their actual experiences across five dimensions. However, scholars such as Swain and Kar (2018, p. 3) and Endeshaw (2021, p. 114) have argued that the expectation-perception gap model may be less effective in private healthcare settings. This is primarily because patients in these contexts tend to have exceptionally high baseline expectations, reducing the significance of the gap when assessing service delivery. Additionally, the SERVQUAL model's foundation in a Western context may not adequately capture the cultural nuances of healthcare services, especially in regions such as the Philippines.

Donabedian's Theory (Donabedian, 1987) provides another crucial framework for evaluating healthcare quality. This approach identifies three essential components: structure, which pertains to the characteristics of the environments in which care is delivered; process, which encompasses the actions taken to provide that care; and outcome, which relates to health results for patients and communities (Chen et al., 2024, p. 157).

Thus, this study employed the SERVQUAL model as its primary theoretical framework for evaluating service quality in private hospitals. By incorporating localized and culturally pertinent dimensions, this study seeks to address the limitations of the existing Western-centric models. This approach is expected to provide a more precise and contextually relevant framework for assessing service quality in the private healthcare sector in Region XII.

The theories outlined above serve as essential theoretical frameworks that illuminate the perspectives and experiences of individuals involved in private hospitals. These frameworks provide valuable insights into the perceptions of patients, healthcare providers, and administrative personnel concerning their interactions and overall quality of care within these institutions. By examining factors such as patient satisfaction, the effects of

healthcare policies, and the complexities of staff-patient dynamics, one can gain a more nuanced understanding of the intricate realities faced by all stakeholders within the private hospital setting.

The limited research on service quality in private hospitals in the Philippines underscores the importance of this study, which aims to enhance existing literature by addressing the shortcomings of Western frameworks like SERVQUAL and SERVPERF. By incorporating culturally relevant dimensions, this research introduces a unique conceptual framework tailored to the Filipino healthcare context, improving the assessment of service delivery for healthcare providers and administrators. Utilizing rigorous statistical methods, specifically Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), the study represents a notable advancement in developing and validating scaling methodologies. The findings are also significant for healthcare consultants, insurance providers, and patient advocacy organizations, as they can guide quality assurance measures and reimbursement frameworks, thereby ensuring hospitals uphold high standards of patient care.

This research significantly improves the quality of healthcare services and promotes a patient-centered approach within private hospital environments by addressing both theoretical frameworks and practical applications. The study contributes to the achievement of several United Nations Sustainable Development Goals (SDGs). It aligns with strategic objectives related to performance optimization, stakeholder engagement, and the creation of sustainable value, directly supporting national and international development agendas, including SDG 3, which focuses on good health and well-being; SDG 8, which aims for decent work and economic growth; and SDG 11, which emphasizes sustainable communities.

METHODS

This study seeks to develop and validate a construct designed to measure service quality in private hospitals located in Region XII. The subsequent sections will elaborate on the methodologies employed in this study.

Study Participants

In the qualitative phase of this study, purposive sampling was utilized to select ten key informants from Level 2-accredited private hospitals in Region XII, comprising three hospital administrators, a medical director, a nursing director, and a quality assurance officer, and seven patient attendants who actively engaged in the care of admitted patients. A systematic review indicated that qualitative methods for evaluating saturation typically necessitate 9 to 17 interviews, particularly in studies involving homogeneous populations (Hennink and Kaiser, 2022, p. 9). The selection of these informants was predicated on their extensive and direct involvement in hospital care, thereby offering valuable insights into service quality experiences. Patient attendants were prioritized over patients as primary informants to ensure that the perspectives on service quality were rooted in active caregiving and sustained interactions with healthcare providers, aligning with Filipino caregiving norms. Eligibility criteria stipulating a minimum of two years of relevant professional experience for hospital administrators and legal age for patient attendants, who must have served as consistent caregivers for admitted patients during the interview period, were strictly enforced. Additionally, the study focused exclusively on attendants from private hospitals holding at least Level 2 DOH accreditation.
In the quantitative phase of the study, two rounds of surveys were conducted with respondents using a convenience sampling method to select participants. Printed questionnaires were distributed to patient attendants at selected private hospitals, resulting in 255 responses for the EFA and 370 responses for the CFA. The sample sizes were determined based on established guidelines from the literature, including the rule of thumb and item-to-response ratio (White, 2021, p. 2; Hair et al., 2019, p. 633; Wolf et al., 2013, p. 10). Although the study aimed for broad geographic representation, data collection was limited in certain areas due to a regional Monkeypox outbreak and associated health protocols (Mamac, 2025). As a result, there was a disproportionately large number of responses from General Santos City during both the EFA and CFA phases.

Materials and Instruments

This study used two primary methods for data collection: (a) in-depth interviews with research participants and (b) responses gathered from a survey questionnaire. Two instruments were employed to collect information

about service quality in private hospitals to achieve the research objectives. The first instrument was designed to gather data through in-depth interviews (Appendix A). This process helped develop various statements about service quality in private hospitals (Grand-Guillaume-Perrenoud et al., 2023, p. 22). Experts reviewed the interview guide questionnaire to ensure that the questions aligned with the study's objectives. Additionally, six validators were provided with a validation sheet to assess the relevance of these items. Furthermore, it employs a Likert scale that ranges from 1 to 5, allowing for the evaluation of participants' agreement levels with each survey item (Lindner and Lindner, 2024, pp. 155-157). Consequently, two instruments were employed for the quantitative phase of the study. The initial questionnaire, utilized during the EFA stage, comprised a collection of items developed from in-depth interviews and subsequently validated by a panel of experts. The second survey instrument for the CFA stage consisted of the items that remained after the factor reduction process.

The internal consistency of the questionnaire was evaluated using Cronbach's Alpha to determine its reliability. This coefficient measured internal consistency and reliability for the scale, particularly within research and assessment practices.

Design and Procedure

The study employs a sequential exploratory approach that combines qualitative and quantitative techniques. Initially, qualitative methods are utilized to develop the constructs, followed by the application of quantitative methods for validation, as noted by Creswell and Plano Clark (2018, p. 195). Additionally, DeVellis (2017, p. 184) highlights that this methodological framework is particularly beneficial for the rigorous processes involved in scale development and validation.

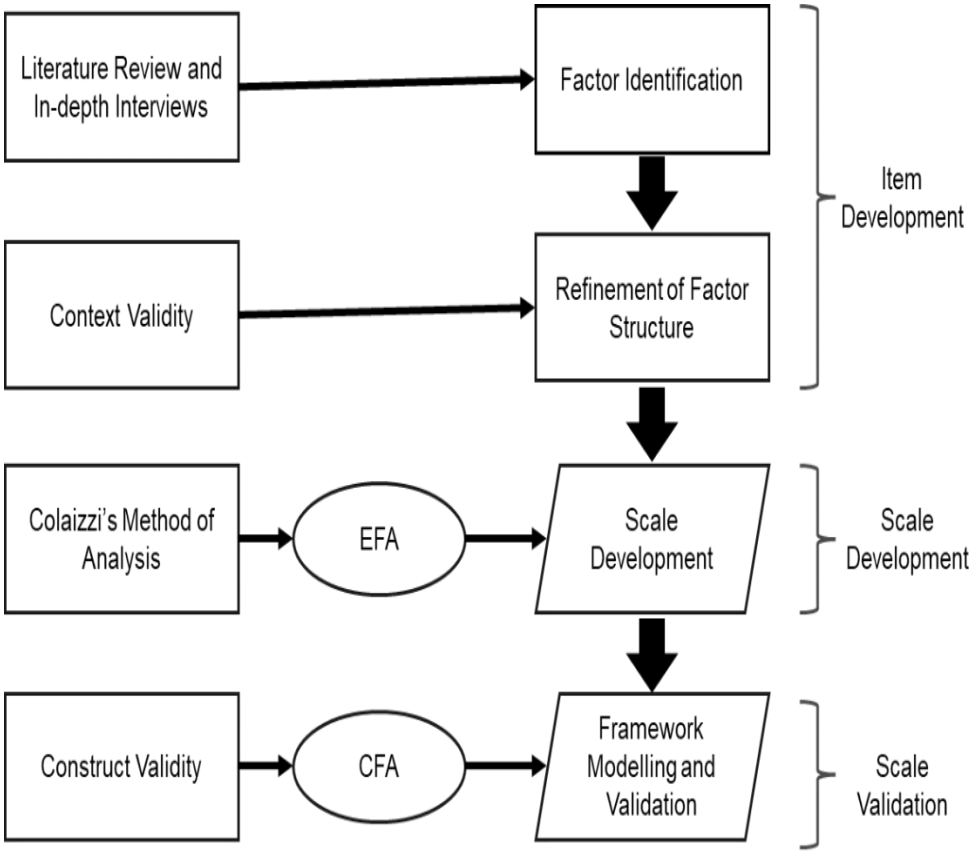


Figure 1. Scale Development and Validation Process

Figure 1 illustrates the phases involved in developing and validating the scale, adhering to rigorous best practices in psychometric scale construction (Creswell and Plano Clark, 2018, p. 195; DeVellis, 2017, p. 184). Additionally, the study incorporates best practices for scale development as recommended by Boateng et al. (2018). The process consists of three phases: (1) Item Development, (2) Scale Development, and (3) Scale Validation.

Qualitative Phase

In the initial phase of this study, the emphasis was placed on delineating service quality specifically within the context of private hospitals, commencing with a thorough literature review that established SERVQUAL models. Following this, data collection utilized qualitative methods, including in-depth interviews with participants, which were subsequently analyzed using Colaizzi's coding techniques to identify key thematic insights critical for the formulation of survey items. This phase also involved the careful creation of item statements to ensure content validity. To validate the resulting item pool, a panel of experts, each possessing specialized knowledge in scale development, education, service quality, and relevant industry practices, assessed the reliability of the statements (Jeldres et al., 2023, p. 4). A binary scoring system was implemented to gauge expert feedback, where a score of 1 indicated that an item was deemed "essential," while a score of 0 suggested it was "useful but not essential" or "not necessary." This methodology aligned with Lawshe's (Jeldres et al., 2023, pp. 2-4) assertion regarding the importance of expert scrutiny in the evaluative tool's content. Consequently, a consensus was required among the ten expert panel members, all of whom hold advanced degrees and possess expertise in both academia and industry, with a minimum agreement score of 0.80 necessary for each item's validity; items that did not meet this criterion were either revised or excluded from further consideration (Lawshe, 1975).

Quantitative Phase

The quantitative phase of the study employs EFA and CFA. In this phase, quantitative research was conducted to investigate the factors affecting service quality in private hospitals within Region XII. Prior to conducting EFA, the necessary statistical assumptions were assessed to determine the suitability of the dataset (Statistics Solutions, 2022). This evaluation included checking for sampling adequacy and ensuring there were sufficient intercorrelations among the variables (Kaiser, 1974, p. 35; Hair et al., 2019, p. 136).

The preliminary diagnostic tools used were the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO test evaluated whether the partial correlations among the data were sufficiently close to zero, indicating that at least one latent factor was influencing the variables. The minimum acceptable KMO value is 0.50 (Kaiser, 1974, p. 35; Hair et al., 2019, p. 136), although many authors recommend aiming for a minimum value of 0.60 before conducting factor analysis.

Additionally, Bartlett's Test of Sphericity determined whether the correlation matrix of the variables significantly differed from an identity matrix. For the factor analysis to be considered significant, the value from Bartlett's Test needed to be less than 0.05 (Hair et al., 2019, p. 137). Following these assessments, both Principal Component Analysis (PCA) and Principal Axis Factoring (PAF) were utilized, focusing on extracting factors with Eigenvalues greater than one (>1). A Scree Plot was employed to identify the optimal number of factors to retain. Items with low factor loadings (≤ 0.6) or significant cross-loadings were systematically excluded to enhance the clarity of the factor structure, ensuring that each item correlated strongly with a single factor.

To assess the scale's dimensionality, a principal component analysis (PCA) using maximum likelihood extraction and VARIMAX orthogonal rotation was implemented. This approach aimed to reveal the underlying structure of the dataset while improving the interpretability and clarity of the identified factors (Costello and Osborne, 2005, pp. 1-2). Factors with latent roots or eigenvalues exceeding 1.0 were considered significant, while those with latent roots below 1 were regarded as insignificant and excluded from further analysis (Hair et al., 2019, p. 141).

A thorough item reduction analysis was conducted to ensure the inclusion of only the most relevant, functional, and internally consistent items. This phase aimed to identify and possibly eliminate or modify items that showed minimal relevance to the domain under investigation (Boateng et al., 2018, p. 149). This analysis systematically refined the scale's items to enhance its psychometric properties and efficiency. The goal was to shorten the scale while maintaining its reliability and validity, thereby improving respondent engagement and minimizing response errors (Staffini et al., 2022, p. 1).

The final phase focuses on statistically validating the newly developed service quality scale. This involved CFA as outlined by Dabbagh et al. (2023, p. 2). Various statistical methods were applied using the developed scale to identify the underlying dimensions of service quality and determine the scale's structure. CFA was conducted to substantiate the effectiveness of the developed instrument further and assess the data's suitability for the model. The criteria for evaluating model fit emphasize three categories within structural equation modeling (SEM): absolute fit, incremental fit, and parsimonious fit. Absolute fit assessed how effectively the model replicated the observed data, utilizing metrics such as the chi-square (x^2) with a p-value exceeding 0.05, the Root Mean Square Error of Approximation (RMSEA) of less than 0.08, and the Goodness-of-Fit (GFI) with a threshold greater than 0.95. Incremental fit measured the enhancement over a baseline model through indices like the Adjusted Goodness-of-Fit Index (AGFI), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Normed Fit Index (NFI), all of which are deemed acceptable at values above 0.95. Parsimonious fit, which considers the balance between model complexity and its fit, employed the chi-square divided by degrees of freedom (x^2/df), with values under 3.0 regarded as acceptable. Collectively, these indices provided a thorough assessment of the model's adequacy (Hair et al., 2019, p. 642).

In the process of data collection, the researcher formally sought and obtained the necessary permissions to conduct the study. Initial letters were sent to the participants involved in the qualitative phase of the study, as well as to the President and/or Medical Director of selected private hospitals in the region, thereby facilitating the administration of surveys within their respective institutions.

The researcher organized in-depth interviews with key informants, each lasting 20 to 30 minutes, following prior consent obtained through an informative email. These discussions were recorded for accuracy. Additionally, surveys were conducted near selected hospitals to ensure participants met specific criteria without interrupting their patient care duties. With the help of enumerators, the researcher explained the study's purpose before distributing questionnaires, aiming for a 100% response rate. Participants had sufficient time to complete the questionnaires, which were then reviewed for completeness. Data collection for the exploratory factor analysis (EFA) phase lasted one month, while the confirmatory factor analysis (CFA) took three weeks.

This research study prioritizes ethical principles by ensuring informed consent, where participants receive thorough information about the study's objectives, methods, and potential risks before voluntarily participating. Confidentiality is maintained through anonymization and secure data storage, with the names of healthcare institutions disclosed only with explicit consent and findings presented in aggregate form. Participants are informed of their right to withdraw at any time without consequences, following the Philippines' Data Privacy Act of 2012. To prevent bias and conflicts of interest, the researcher remains objective throughout the study while disclosing any affiliations with private hospitals. The survey and interview questions are designed to reduce psychological distress, allowing participants to skip uncomfortable questions. By adhering to these ethical considerations, the study aims to uphold research integrity, protect participant rights, and provide valuable insights into healthcare quality.

RESULTS AND DISCUSSIONS

This section presents the results and detailed analysis of the findings obtained from the data gathered throughout the three distinct phases of the study.

Item Development

In-depth interview data were systematically transformed into formalized item statements for the purpose of scale development. Using Colaizzi's method for analysis (Praveena and Sasikumar, 2021, pp. 914-917), participant feedback was organized into specific codes and subsequently clustered into overarching themes. A total of 60 hypothetical, contextually grounded interview excerpts were collected from 10 identified interviewees, coded as PA1 through PA10, representing a diverse linguistic mix of English, Tagalog, Ilonggo, and Cebuano.

These dimensions align thematically with the initial domains of service quality, which include meaningful patient relationships, effective quality management processes, continual improvement through feedback

mechanisms, outcome-oriented procedures, adequate hospital resources, and the accessibility of facilities for patient activities.

Exploratory Factor Analysis (EFA)

A pool of 60 statements was developed for the item scale. Using Lawshe's method for quantitative analysis, the Item-Level Content Validity Index (I-CVI) and the Scale-Level Content Validity Index (S-CVI/Ave) were determined through the average method. The I-CVI results indicated that 40 of the 60 evaluated items received scores of 0.80 or higher, demonstrating significant expert consensus on their importance and meeting the recommended threshold for acceptable content validity. However, eight items, specifically Items 34, 37, 39, 40, 41, 42, 47, and 48, scored below the 0.80 threshold, reflecting inadequate validity.

Prior to conducting EFA, statistical assumptions were tested to evaluate the suitability of the dataset for factor extraction. These assumptions included assessments of sampling adequacy and the presence of sufficient intercorrelations among variables.

Table 1. Sampling Adequacy and Multidimensionality Assumptions in Factor Analysis

		Statistic
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.948
Bartlett's Test of Sphericity	Approx. Chi-Square	9523.159
	df	666
	Sig.	<.001

As shown in Table 1, the KMO index yielded a value of 0.948, which exceeds the commonly accepted threshold of 0.60 for adequate sampling (Kaiser, 1974, p. 35). This indicates that the level of interrelationships among the variables is commendable (Hair et al., 2019, p. 136).

These findings confirm that the dataset meets the necessary assumptions for proceeding with exploratory factor analysis using maximum likelihood extraction and VARIMAX rotation. The sample size and inter-item correlations are deemed adequate to support the extraction of latent constructs underlying the scale items.

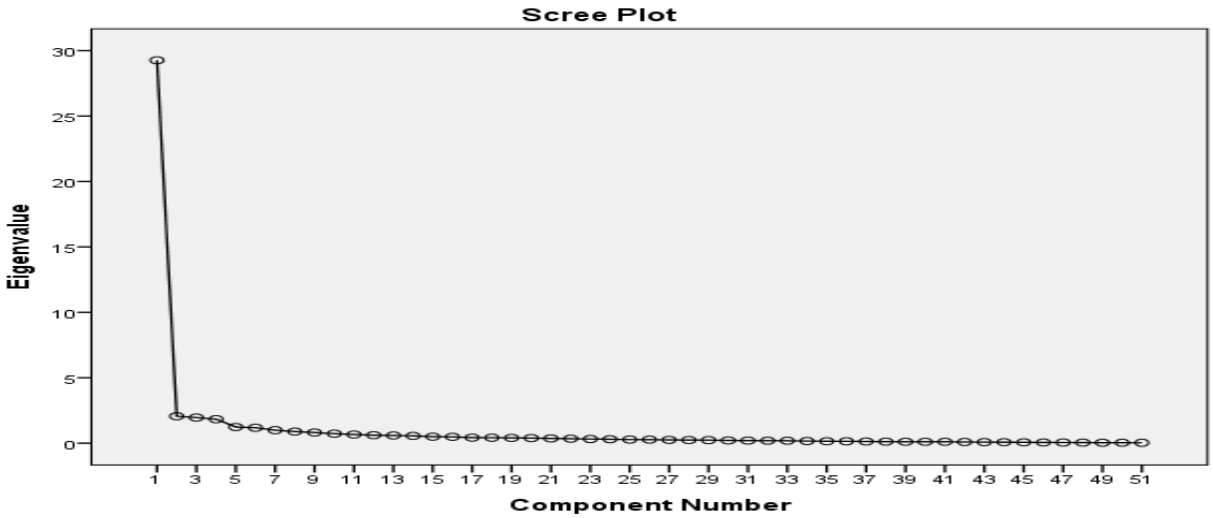


Figure 2. A Scree Plot of Factors Identified in the EFA

The Scree Plot shown in Figure 2 indicates the optimal number of factors to retain. It reveals approximately six components, with the eigenvalues starting to level off after the sixth factor. This observation suggests a significant drop in eigenvalues after this point, confirming a multidimensional structure. The "elbow" point

highlighted in the plot is crucial for determining the number of significant factors to retain, in line with Chakraborty's (1966) Scree test principle.

As illustrated in Table 2, the latent roots criterion for the extracted factors highlights the percentage of variance associated with each factor. The first factor exhibits an initial eigenvalue of 5.619, corresponding to a variance of 15.186%. The second factor has an initial eigenvalue of 5.499, with a variance of 14.863%. The third factor shows an initial eigenvalue of 5.045 and a variance of 13.635%. The fourth factor presents an initial eigenvalue of 4.034 and a variance of 10.903%. The fifth factor displays an initial eigenvalue of 3.826, equating to a variance of 10.341%. Finally, the sixth factor has an initial eigenvalue of 3.696, reflecting a variance of 9.989%. These six factors collectively account for a cumulative total of 74.917% of the overall variance, surpassing the recommended minimum variance threshold of 60% established for exploratory factor analysis in the behavioral and social sciences (Hair et al., 2019, pp. 182-183).

Table 2. Latent Roots Criterion of the Extracted Factors of Service Quality in Private Hospitals

Factor	**Initial Eigenvalue**	**% of Variance**	**Cumulative %**
1. Service Reliability	5.619	15.186	15.186
2. Empathic Communication	5.499	14.863	30.049
3. Service Consistency	5.045	13.635	43.684
4. Participative Engagement	4.034	10.903	54.587
5. Tangible Accessibility	3.826	10.341	64.928
6. Service Responsiveness	3.696	9.989	74.917

The substantial variance explained and the strong loadings of retained items reflect the derived dimensions' conceptual coherence and statistical robustness. These results provide a sound empirical foundation for subsequent confirmatory factor analysis and scale validation efforts.

Table 3. Rotated Component Matrix Showing Factor Loadings of Items in Extracted Dimensions via VARIMAX Rotation

	Factor						
ITEM	**1**	**2**	**3**	**4**	**5**	**6**	**Uniqu e-ness**
The hospital staff often monitored our patient's health indicators.	0.784						0.124
Every aspect of the patients' care was attended to with great attention.	0.778						0.152
They focused on how well patients were getting better.	0.761						0.268
The hospital's processes were organized and worked smoothly together.	0.73						0.195
The test results were carefully examined and responded to quickly.	0.542						0.229
Standard procedures were clearly observed.	0.529						0.335
The follow-up care was steady and reliable.	0.514						0.303
The hospital staff patiently took the time to explain everything to us in a way we could understand.		0. 7					0.221

		67					
The hospital staff really showed they cared about how we felt.		0.754					0.227
The hospital staff genuinely cared about our patient's well-being.		0.68					0.238
The doctors inquired about our emotional well-being.		0.592					0.368
We developed a good relationship with the nurses.		0.581					0.308
The hospital staff were very caring and understanding when we felt scared.		0.58					0.259
Everything was handled with great skill and done quickly.		0.533					0.197
The service was consistently good, even when it was really busy.			0.689				0.276
The hospital staff understood what was expected of them and what their jobs involved.			0.639				0.266
The hospital staff recognized us and treated us with kindness, seeing us as individuals instead of just clients.			0.639				0.235
The way the hospital staff talked and interacted with us felt friendly and supportive.			0.61				0.247
The level of care remained steady and the same at all times of the day.			0.579				0.299
The hospital has straightforward rules, and they were followed properly.			0.571				0.224
The hospital staff frequently checked on our patient to make sure they were doing okay.			0.547				0.265
I received the same level of service no matter how I looked or what my situation was.			0.544				0.273
They were willing to hear ideas on how to make things better.				0.821			0.164
The nurse took note of our ideas and suggestions.				0.774			0.156
They appreciated our opinions and ideas.				0.6			0.33

				85			
I was urged to complete some feedback forms.				0.629			0.286
We were asked to share our thoughts about the food and services we experienced.				0.552			0.296
We found it easy to get around the hospital from one area to another.					0.774		0.185
All the materials and tools were prepared and available whenever they were needed.					0.709		0.232
The comfort rooms were tidy and in good working order.					0.689		0.194
The area was tidy, roomy, and had everything needed for comfort and convenience.					0.529		0.245
Moving our patient from the emergency room to their assigned room was fast and easy.					0.511		0.244
The hospital and its workers welcomed feedback to help make their services better.						0.737	0.279
A doctor inquired if there was anything they could improve on.						0.601	0.31
Our ideas were really appreciated and well-received.						0.588	0.349
The doctor and hospital staff were honest about our patient's condition and didn't try to make it seem like everything was okay.						0.571	0.251
The hospital staff kept a close eye on how our patients were improving and took necessary actions to help them.						0.513	0.251
Extraction Method: Principal Component Analysis							
Rotation Method: Varimax with Kaiser Normalization							
a. Rotation converged in 8 iterations							

Table 3 presents the rotated component matrix, illustrating how the items have clustered within the identified dimensions. A more stringent factor loading threshold of ±0.60 was applied to determine the dimensionality of the scale in accordance with established best practices for scale development (Hair et al., 2019, p. 168). The results indicated a six-factor solution that accounts for a cumulative variance of 74.917%, suggesting that the extracted dimensions effectively capture a significant portion of the variability in the responses. Additionally, as shown in the table, items with high factor loadings and low uniqueness values demonstrate a strong representation within the extracted dimensions.

Factor 1: Service Reliability (SRL)

Factor 1 was identified as "*Service Reliability*." The item with the highest factor loading is "*The hospital staff often monitored our patient's health indicators*" ($\lambda = 0.784$, uniqueness = 0.124). This indicates a strong correlation with factors related to the consistent monitoring of patients, careful attention to all aspects of care, efficient organizational processes, prompt responses to test results, adherence to established protocols, and reliable follow-up care. Together, these elements highlight the hospital's ability to provide healthcare services dependably and accurately.

In accordance with the SERVQUAL framework, the attributes identified are closely linked to the Reliability dimension (Babyar, 2019, Fatima et al., 2018; Endeshaw, 2021), which is defined by the capacity to deliver promised services consistently and accurately. This dimension includes the systematic monitoring of patient health indicators, ensuring comprehensive care attention, and coordinating processes for smooth and predictable operations. Such reliable care delivery is essential for building trust among patients and their families regarding the hospital's competence and commitment to achieving optimal patient outcomes. Therefore, this concept is appropriately termed Service Reliability, as it encapsulates the hospital's consistent and precise delivery of both clinical and support services. This classification is firmly grounded in SERVQUAL theory, emphasizing the dependable and trustworthy nature of the hospital's performance in providing patient-centered care (Setiono and Hidayat, 2022, p. 339).

Factor 2: Empathic Communication (EC)

Factor 2 has been designated as "*Empathic Communication*." This factor is characterized by high loadings on items that reflect the hospital staff's patience in providing explanations of medical information, their concern for patients' emotional states, their demonstration of genuine care, their inquiries regarding emotional well-being, and their efforts to establish rapport with both patients and their families (Ferreira et al., 2023, p. 1; Moya-Salazar et al., 2023, p. 8; Howick et al., 2018, p. 249). An illustrative statement encapsulating this factor is, "*The hospital staff patiently took the time to explain everything to us in a way we could understand*" (λ = 0.767, uniqueness = 0.221). These elements underscore the staff's capacity to communicate with compassion and sensitivity.

Following the SERVQUAL framework, these attributes closely align with the dimension of Empathy, which emphasizes the provision of caring, individualized attention, and an understanding of the emotional needs of patients. The consistent emergence of statements on caring, comprehensiveness, and supportive interactions reinforces the designation of this factor as Empathic Communication. This nomenclature not only reflects the expression of empathy but also highlights the critical communication processes through which such empathy is conveyed, which are essential for fostering trust and emotional security within healthcare environments.

Factor 3: Service Consistency (SC)

Factor 3 was labelled as "*Service Consistency*." This factor strongly correlates with statements that articulate the consistent quality of care hospital staff provides, even during peak periods of service demand (Fatima et al., 2019; Radmore et al., 2020; Nguyen et al, 2021). It emphasizes the clarity of staff roles, the individualized treatment of patients, the maintenance of friendly and supportive interactions, and adherence to straightforward hospital regulations. Additionally, it encompasses the continuous provision of care throughout the day and the equitable delivery of the same high standard of care irrespective of patients' backgrounds. Particularly illustrative statements include, "*The service was consistently good, even when it was really busy*" (λ = 0.689, uniqueness = 0.276) and "*The hospital staff understood what was expected of them and what their jobs involved*" (λ = 0.639, uniqueness = 0.266).

These attributes closely correspond with the Reliability dimension of the SERVQUAL framework, which underscores the importance of dependable and uniform service performance (Babyar, 2019, Fatima et al., 2018; Endeshaw, 2021). Nevertheless, given the recurrent emphasis on consistency and stability, the designation "Service Consistency" is deemed most fitting. This terminology effectively encapsulates how the hospital upholds reliable, equitable, and high-quality service over time, across various staff members, and among diverse patient demographics.

Factor 4: Participative Engagement (PE)

Factor 4 has been designated as "*Participative Engagemen*t." This factor exhibits significant loadings on items that reflect a commitment to soliciting suggestions, appreciating feedback, seeking opinions, and fostering participation through feedback forms. Notable indicators include statements such as, "*They were willing to hear ideas on how to make things better*" (λ = 0.821, uniqueness = 0.164) and "*The nurse took note of our*

ideas and suggestions" (λ = 0.774, uniqueness = 0.156). These findings underscore a culture that values the input of patients and their families in enhancing services.

The attributes associated with this factor resonate with the Empathy dimension of the SERVQUAL model, particularly in its focus on recognizing patients as active partners and understanding their viewpoints (Hickmann, Richter, and Schlieter, 2022, p. 1). Additionally, the emphasis on active involvement and shared contributions justifies the designation of this factor as Participative Engagement, thereby highlighting the importance of two-way communication and the inclusion of patients and their families in service improvement.

Factor 5: Tangible Accessibility (TA)

Factor 5 has been labelled as "*Tangible Accessibility*." This factor exhibits substantial loadings on various statements about the ease of navigation within the hospital, the availability of materials and equipment, the cleanliness of facilities, and the overall maintenance of spaces. For instance, one statement noted, "*We found it easy to get around the hospital from one area to another*" (λ = 0.774, uniqueness = 0.185). These attributes correspond directly to the Tangibles dimension of the SERVQUAL model, which addresses the physical environment, equipment, and facilities.

In light of the prevailing emphasis on accessibility, convenience, and the functional quality of physical surroundings, the designation "Tangible Accessibility" is most appropriate (Zubayer and Hoque, 2019, p. 49). This nomenclature underscores the notion that the hospital's physical resources and infrastructure are adequately maintained and readily accessible and convenient for patients and their families.

Factor 6: Service Responsiveness (SRE)

Lastly, Factor 6 was identified as "*Service Responsiveness*." This factor demonstrates a significant correlation with statements emphasizing the importance of openness to feedback, the proactive solicitation of suggestions, transparency in communicating patient conditions, and the responsiveness to observations regarding patient progress. For instance, the statement "*The hospital and its workers welcomed feedback to help make their services better*" (λ = 0.737, uniqueness = 0.279) reflects this sentiment, alongside another statement, "*A doctor inquired if there was anything they could improve on*" (λ = 0.601, uniqueness = 0.31). These indicators signify a commitment to adaptability, responsiveness, and a continuous improvement paradigm prioritizing patient needs.

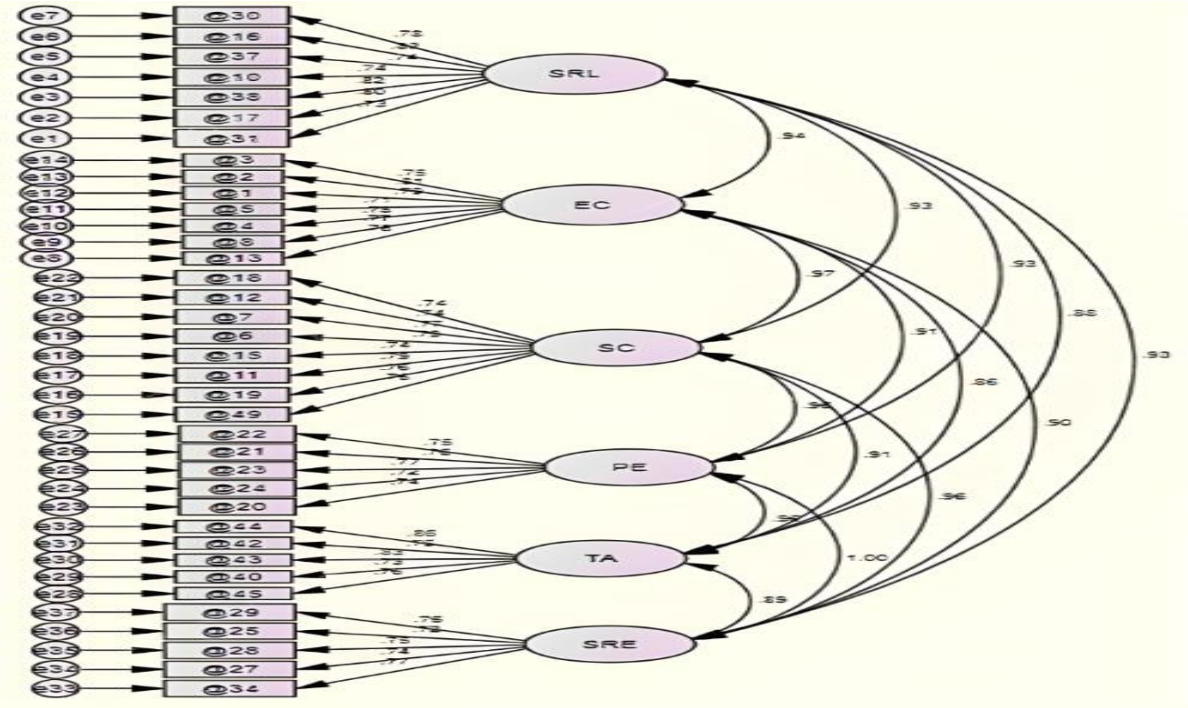
These characteristics closely resonate with the Responsiveness dimension of the SERVQUAL model, which pertains to an organization's willingness to assist customers and deliver timely services (Yusefi et al., 2022, p. 9; Abu-Nahel et al., 2020, p. 58). The emphasis placed on acting upon feedback and meticulously monitoring patient progress reinforces the designation of Service Responsiveness. This designation aptly encapsulates the institution's dedication to listening, adapting, and proactively responding to patient and family input.

Confirmatory Factor Analysis (CFA)

The subsequent discussions focus on the final phase of the scale development process, which pertains to the validation through confirmatory factor analysis of the generated item statements reflecting service quality in the context of private hospitals in Region XII.

Following the guidelines established by Hair et al. (2019, pp. 633), an iterative model refinement process was undertaken, progressing through four models to enhance theoretical coherence and statistical fit. The evaluation of model fit indices was thoroughly conducted. This iterative refinement process allowed for an acceptable and parsimonious fit across the four-stage model, which reflects a six-factor structure comprising Service Reliability (SRL), Empathic Communication (EC), Service Consistency (SC), Participative Engagement (PE), Tangible Accessibility (TA), and Service Responsiveness (SRE). Each latent construct is assessed through multiple observed indicators, with standardized factor loadings ranging from 0.74 to 0.87, each exceeding the established threshold of 0.70. This outcome demonstrates robust item reliability and supports convergent validity, as noted by Hair et al. (2019, p. 786). The analysis reveals significant

intercorrelations among the six constructs, highlighting that while each factor is conceptually distinct, they are closely interconnected, collectively reflecting the multidimensional nature of service quality in the hospital context. These findings corroborate the theoretical framework established in the qualitative phase and validate all six dimensions in the subsequent validation processes.



Legend:

SRL – Service Reliability	PE – Participative Engagement
EC – Empathic Communication	TA – Tangible Accessibility
SC – Service Consistency	SRE – Service Responsiveness

Figure 3. Baseline CFA Model of Service Quality in Private Hospitals in Region XII

Figure 3 illustrates the baseline Confirmatory Factor Analysis (CFA) model representing service quality within private hospitals in Region XII. The model reflects a six-factor structure comprising Service Reliability (SRL), Empathic Communication (EC), Service Consistency (SC), Participative Engagement (PE), Tangible Accessibility (TA), and Service Responsiveness (SRE). Each latent construct is assessed through multiple observed indicators, with standardized factor loadings ranging from 0.74 to 0.87, each exceeding the established threshold of 0.70. This outcome demonstrates robust item reliability and supports convergent validity, as noted by Hair et al. (2019, p. 786). The analysis reveals significant intercorrelations among the six constructs, highlighting that while each factor is conceptually distinct, they are closely interconnected, collectively reflecting the multidimensional nature of service quality in the hospital context. These findings corroborate the theoretical framework established in the qualitative phase and validate all six dimensions in the subsequent validation processes.

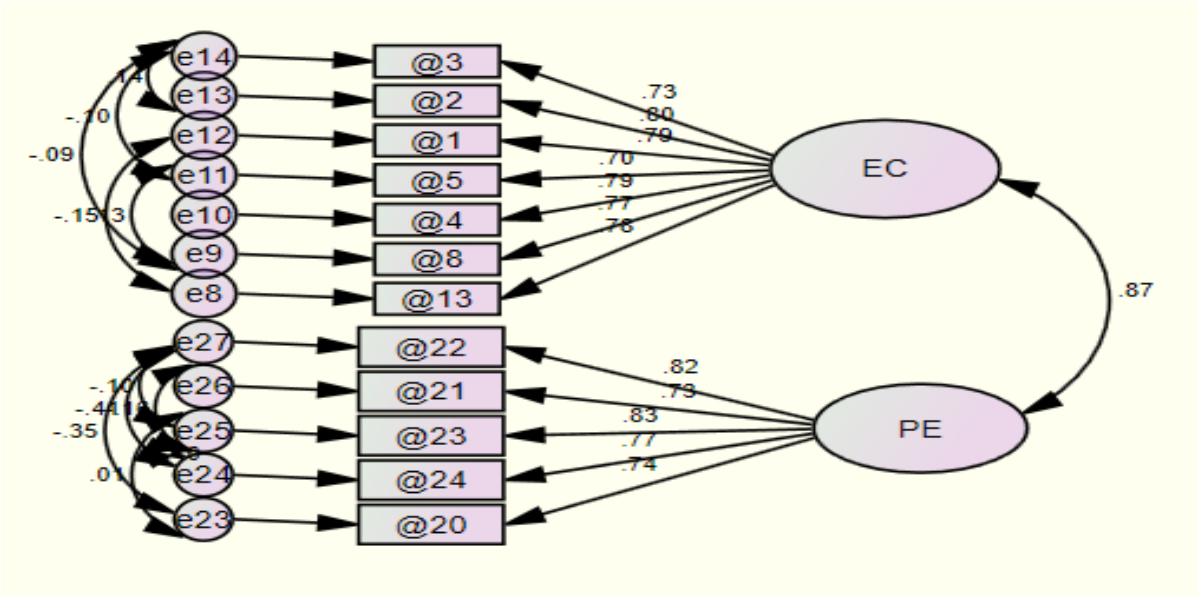
Table 4. Model Fit Indices Evaluation

	x^2	X^2/df	GFI	CFI	TLI	RMSEA	PCLOSE
Initial Results	2246.54	3.66	0.748	0.858	0.546	0.085	0.00
Model 1	739.450	3.257	0.865	0.924	0.91	0.078	0.00
Model 2	257.85	2.528	0.926	0.964	0.951	0.064	0.008
Model 3	79.49	1.893	0.967	0.986	0.986	0.049	0.510

Acceptable Values		<3.00	≥0.90	≥0.90	≥0.90	≤0.08	>0.05
Good Fit Values	**p<0.05**		**≥0.95**	**≥0.95**	**≥0.95**	**≤0.06**	**>0.05**

Table 4 illustrates the progressive enhancement in model fit indices achieved through carefully refining the structural model, specifically by eliminating highly correlated factors and error terms. The initial model exhibited a suboptimal fit, with values that did not meet acceptable thresholds (e.g., X^2/df = 3.257, CFI = 0.858, TLI = 0.546, RMSEA = 0.085), indicating the necessity for respecification (Hair et al., 2019, pp. 638-639). Subsequent modifications yielded significant improvements, particularly in Model 3, where all indices either satisfied or exceeded the recommended cutoffs χ^2/df = 1.893, GFI = 0.967, CFI = 0.986, TLI = 0.986, RMSEA = 0.049, and PCLOSE = 0.510, and retained only two latent constructs: Empathic Communication (EC) and Patient Engagement (EP). These results reflect a yielded goodness-of-fit index following widely accepted criteria (Hair et al., 2019, p. 687).

After a comprehensive evaluation of model fit, Model 3 was the most suitable choice, based on the baseline model (GFI = 0.967, CFI = 0.986, TLI = 0.986, RMSEA = 0.049). Six distinct factors were identified during the EFA phase. However, the subsequent CFA revealed that only two factors demonstrated the necessary robustness and reliability to be included in the final model, as illustrated in Figure 5.



Legend:

EC – Empathic Communication PE – Participative Engagement

Figure 4. Best Fit Model of Service Quality in the Context of Private Hospitals in Region XII

The transition from a six-factor EFA model to a two-factor CFA model was informed by both statistical and theoretical considerations. Empirical findings from the CFA highlighted substantial inter-correlations among certain latent constructs, particularly between dimensions such as Participative Engagement and Empathic Communication, which suggested a significant conceptual overlap. Additionally, the presence of cross-loadings indicated redundancy among factors, prompting a model respecification aimed at enhancing parsimony.

From a theoretical standpoint, this refinement aligns with the SERVPERF model, which posits that perceived service quality is often most effectively represented through performance-based dimensions rather than by gaps in expectations (Cronin and Taylor, 1994, p. 125). The resultant two-factor structure effectively encapsulates both the interpersonal and systemic dimensions of healthcare delivery (Waweru et al., 2020, p.

27). This framework is particularly pertinent in high-context, patient-centered environments, such as private hospitals in Region XII.

This iterative refinement process highlights the importance of theory-driven model adjustments and emphasizes the robustness of the final model structure (Kline, 2016, p. 266). The retention of these constructs underscores their vital role in measuring service quality within the unique cultural and operational context of private hospitals in Region XII.

Table 5. Factor loadings for CFA Model 3

			Estimate	**S.E.**	**Standardize**	**C.R.**	**P**
@13	<---	EC	1		0.775		
@8	<---	EC	1.023	0.066	0.768	15.526	***
@4	<---	EC	1.089	0.067	0.794	16.277	***
@5	<---	EC	0.869	0.062	0.704	13.982	***
@1	<---	EC	0.97	0.064	0.786	15.073	***
@2	<---	EC	1.091	0.067	0.797	16.267	***
@3	<---	EC	0.913	0.063	0.728	14.431	***
@20	<---	PE	1		0.74		
@24	<---	PE	0.957	0.069	0.771	13.793	***
@23	<---	PE	0.952	0.064	0.83	14.76	***
@21	<---	PE	0.93	0.069	0.733	13.414	***
@22	<---	PE	1.033	0.079	0.824	13.131	***

All items related to Empathic Communication (EC) demonstrated strong standardized loadings, exceeding 0.70, which confirms convergent validity. The critical ratios (C.R.) are significantly above ±1.96, and all p-values are highly significant ($p < 0.001$), indicating robust indicator reliability. Similarly, the Participative Engagement (PE) items exhibited strong standardized factor loadings ranging from 0.733 to 0.830, accompanied by significant p-values, further supporting the dimensionality and convergent validity of the construct (Table 5).

These findings suggest that the factor loading results for both EC and PE constructs provide compelling evidence of construct validity within the proposed measurement model. The standardized loadings for the EC factor ranged from 0.704 to 0.797, while those for PE fell between 0.733 and 0.830. According to Hair et al. (2019, p. 168), factor loadings exceeding 0.70 indicate strong convergent validity, suggesting that each observed item shares substantial variance with its underlying latent construct.

The high and consistent loadings across both factors further confirm the items' conceptual cohesion and empirical soundness, while also demonstrating the absence of problematic cross-loadings or measurement errors. Consequently, the factor structure illustrates both convergent and discriminant validity, supporting the reliability and dimensional integrity of the instrument developed for assessing service quality in private hospitals.

Table 6. Covariance Between Latent Factors

			Estimate	**S.E.**	**C.R.**	**P**
EC	<-->	PE	0.437	0.046	9.477	***

Table 6 demonstrates that the latent constructs of Empathetic Communication (EC) and Participative Engagement (PE) show a significant positive covariance (Estimate = 0.437, $p < 0.001$). This moderate relationship indicates that, while these constructs are distinct, they are both conceptually and empirically related. This connection is beneficial within a service quality framework, highlighting the importance of interpersonal interaction and collaborative decision-making (Parasuraman et al., 1988; Hair et al., 2019).

Table 7. Reliability Coefficients

Sub-scale	**Number of Items**	**Cronbach's Alpha**
Empathetic Communication	7	0.908
Participative Engagement	5	0.862
Total Scale	**12**	**0.935**

The results presented in Table 7 indicate that the Cronbach's alpha values for both subscales and the overall instrument exceed the 0.70 threshold, signifying excellent internal consistency. Notably, the reliability of the total instrument is very high ($\alpha = 0.935$), which underscores the scale's robustness in measuring service quality within the context of private hospitals.

The development and validation of the scale utilized a systematic, multi-phase methodology in alignment with best practices in psychometric construction, beginning with the generation of a 60-item pool derived from a comprehensive literature review and expert interviews. Through expert validation, items deemed essential by at least 80% of the panel were retained, ensuring relevance and face validity. Exploratory Factor Analysis (EFA) subsequently unveiled a six-factor structure of 37 items, encapsulating over 74% of total variance. Although overlapping constructs were identified, leading to the removal of items with high cross-loadings and redundancies, Confirmatory Factor Analysis (CFA) ultimately defined a refined model encompassing 12 items across two higher-order dimensions: Empathic Communication and Participative Engagement. This final model exhibited robust fit indices (CFI = 0.986, RMSEA = 0.049, $\chi^2/df = 1.893$), affirming its internal structure and measurement integrity. The trajectory of this development reflects both empirical rigor and theoretical refinement, transitioning from broad constructs to a focus on core service attributes relevant to healthcare delivery as perceived by patient attendants, thereby enhancing the instrument's credibility and practical applicability.

Significance of the Model. Empathic Communication (EC) refers to how hospital staff demonstrate authentic concern for patients, provide clear and detailed explanations, offer emotional support, and establish strong relationships with patients and their families. As Kwame and Petucka (2021, p. 9) emphasized, effective communication is essential in nurse-patient interactions and a fundamental aspect of nursing care. When patient-centered communication fosters a therapeutic environment that cultivates trust and mutual respect throughout the care process. This approach enhances care practices that effectively address patients' and caregivers' needs, concerns, and preferences. This concept closely aligns with Filipino values such as *malasakit* (compassion) and *pakikipagkapwa* (relational solidarity), underscoring the importance of emotional investment and the human experience in caregiving (Menguin, 2022; Cancino, n.d.). Research conducted by Arshad (2024, p. 1533) indicates that EC significantly enhances patient trust, improves perceived quality of care, and increases overall patient satisfaction.

Conversely, **Participative Engagement (PE)** highlights the critical role of active participation by patients and their families in the healthcare process. This engagement may manifest through service feedback, shared decision-making, and effective communication loops. This approach is particularly relevant in the Philippines, especially in Region XII, where the role of family caregivers, often called *bantay*, is deeply embedded in cultural practices. A review by Marzban et al. (2022, p. 7) illustrates that involving patients and families in the care process leads to greater treatment adherence, enhanced satisfaction, and a heightened sense of respect, acknowledging caregivers as both observers and evaluators of care. This model contrasts traditional service quality frameworks, such as SERVQUAL.

Integrating these two dimensions results in a culturally sensitive model that aligns with Filipino sociocultural norms and expectations within healthcare settings. This refined model enhances patient satisfaction and mitigates the biases present in Western-centric frameworks by prioritizing interpersonal and participatory elements. It addresses significant gaps in the existing literature and practice by offering a locally validated and empirically supported framework specifically designed for the private hospital system in Region XII.

CONCLUSION AND RECOMMENDATION

This study successfully developed and validated a context-specific measurement scale to assess service quality in private hospitals in Region XII, Philippines. Using a sequential exploratory mixed-methods research design, the study addressed the limitations of existing Western-centric service quality models, particularly SERVQUAL and SERVPERF, by integrating culturally relevant and operationally significant dimensions.

The results of the Confirmatory Factor Analysis (CFA) culminated in a robust final model characterized by two significant constructs: Empathic Communication (EC) and Participative Engagement (PE). These dimensions encapsulate essential interpersonal, emotional, and collaborative elements pivotal to service delivery within the Philippine healthcare context, wherein family involvement and relational trust are underscored as foundational principles. The resultant two-factor structure, derived from the CFA and encompassing Relational and Operational Service Quality, presents a model that is both statistically valid and theoretically sound. Together, these dimensions illuminate the core aspects of quality in patient care as perceived by patient attendants, highlighting the importance of humanistic and empathetic interactions alongside consistent and effective healthcare processes. This structural framework is congruent with existing literature emphasizing the performance-oriented approach of SERVPERF, thereby providing a more actionable and patient-centered perspective specifically tailored to the dynamics of private hospitals in the Philippines.

The findings strongly recommend that hospital administrators and executive management teams adopt the validated 37-item service quality scale as a strategic tool for evidence-based assessment and continuous quality improvement. This approach will help them identify service performance gaps and enhance patient satisfaction. Furthermore, leadership should establish training programs focused on empathic communication to develop staff competencies in empathic listening and emotional intelligence, aligning these skills with the hospital's mission of providing compassionate care.

To improve patient engagement, private hospitals in Region XII must invest in systematic patient feedback mechanisms and establish protocols for shared decision-making. This will increase patients' sense of agency and enhance their satisfaction. Integrating empathic communication and participative engagement into strategic planning can help hospitals distinguish themselves in the healthcare marketplace, emphasizing service excellence and relational care, which are linked to improved patient retention and institutional reputation.

Future research should focus on validating the newly developed service quality scale across various regions of the Philippines to assess its generalizability and responsiveness to local healthcare dynamics and cultural differences. The study responses demonstrated a significant concentration in General Santos City, accounting for 64% of the feedback collected from the CFA. It is important to address the sampling imbalance identified in this study, especially the overrepresentation of respondents from General Santos City due to health restrictions. Future studies should consider implementing more stratified or quota-based sampling techniques to ensure broader representation across different provinces.

Additionally, conducting comparative analyses with established measurement frameworks such as SERVQUAL, SERVPERF, and HEALTHQUAL is recommended to evaluate the diagnostic strength and predictive validity of the developed scale in capturing patient satisfaction and loyalty. Expanding the model to include emerging contextual variables—such as digital health innovation, caregiver burden, health literacy, and considerations of religious or ethnic sensitivities—may further enhance its explanatory power and strategic applicability.

In conclusion, applying the EC and PE dimensions offers more than merely measurement utility; it provides a transformative perspective for reengineering healthcare delivery around relational and participative care

principles. Rooted in empirical data and local cultural contexts, this scale empowers private hospitals to adopt a more humanistic and inclusive service model. This aligns with the strategic goals of business administration—specifically, performance optimization, stakeholder engagement, and sustainable value creation—and contributes directly to national and international development agendas, including Sustainable Development Goals (SDG) 3, 8, and 11.

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APPENDIX A

In-Depth Interview Guide

Hospital Administrators	**Patient Attendants**
As the <*position*>, what essential indicators do you rely on to evaluate the quality of service/care in your hospital? a. How do you evaluate them?	As the patient's attendant, how would you describe an excellent quality in a hospital?
What do you think are the key elements that play a significant role in enhancing patient satisfaction in private hospitals?	What do you think are the most critical factors that contribute to a quality service in a hospital?
What factors do nurses consider to ensure the delivery of high-quality service? a. Would you like to share specific examples?	
Have you come across SERVQUAL models in assessing service quality? a. If so, do you believe that these models accurately represent the unique service quality aspects in our region's private hospitals? b. Kindly explain your reasons why or why not?	Have you ever given feedback on hospital services through a survey or questionnaire? a. If yes, what can you recall about the areas these tools covered? b. Do you think these tools truly reflect the patient experience? c. Kindly explain your reasons why or why not?
What do you think are the contextual factors that influence patient expectations and perceptions of service quality not covered by existing SERVQUAL models or instruments?	What do you think are specific aspects of service quality that is/are not included in the current assessment tool?
What additional service quality factors should be included to better reflect the realities of private hospitals in the region?	What suggestions do you have to improve service quality in private hospitals? What additional quality service factors should be included to better reflect the realities of private hospitals in the region?