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# Service quality as a predictor of patient retention and word-of-mouth referral in secondary healthcare: Evidence from the Niger delta region, Nigeria

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ABSTRACT

This study investigated service quality as a predictor of patient retention and word-of-mouth (WOM) referral in secondary healthcare facilities within the Niger Delta region of Nigeria. Driven by increasing competition and shifting patient expectations, the research examined how five core dimensions of service quality tangibles, reliability, responsiveness, assurance, and empathy influence healthcare consumers' long-term loyalty and structural recommendations. A cross-sectional survey research design was adopted. Data were collected from 384 discharged patients across selected secondary health structures in Cross River, Delta, and Rivers States using a structured, structurally validated questionnaire. Structural Equation Modeling (SEM) and multiple regression techniques were used to analyze the data. The empirical findings revealed that service quality significantly and positively predicted both patient retention and word-of-mouth referral. Individually, empathy, responsiveness, and assurance exerted the strongest predictive influence on retention, while reliability and tangibles significantly drove positive word-of-mouth communications. The study concluded that clinical efficacy alone is insufficient to guarantee institutional survival in modern healthcare ecosystems; structural and interpersonal service delivery frameworks form the bedrock of sustainable patient relationship management. Based on these findings, it is recommended that hospital management boards in the Niger Delta prioritize continuous customer-care training for frontline staff, optimize internal administrative processes to reduce waiting times, and invest in basic physical infrastructure to improve the tangible healthcare environment.

## Introduction

The contemporary healthcare delivery ecosystem in developing sub-Saharan African nations, particularly Nigeria, is undergoing an unprecedented structural paradigm shift. Historically, healthcare administrative frameworks operated under a clinical-centric model where the primary, if not sole, metric of institutional success was clinical efficacy or technical quality. However, the liberalization of healthcare services, the emergence of highly specialized private clinical networks, and an increasingly enlightened, consumerist patient demographic have altered this dynamic.

Healthcare consumers no longer evaluate healthcare facilities purely on clinical outcomes, which they often lack the technical capacity to judge objectively. Instead, they assess their experiences using functional quality parameters how the service is delivered structurally, interpersonally, and environmentally. In secondary healthcare facilities, which serve as the critical bridge between primary health interventions and tertiary specialized academic medicine, managing this functional experience has become a primary determinant of institutional sustainability.

In Nigeria's Niger Delta region a complex socioeconomic and geographic terrain marked by unique industrial, environmental, and infrastructural dynamics secondary healthcare facilities face distinct administrative pressures. Public and private hospitals in this zone navigate a volatile operational terrain characterized by high patient volumes, structural underfunding, internal brain-drain phenomena among

clinical staff, and fluctuating consumer purchasing power. Within this challenging environment, secondary health centers must maintain operational viability.

Traditional public sector approaches often neglected patient satisfaction, relying on a captive market. However, modern realities show that dissatisfied patients rapidly migrate to alternative providers, engage in negative word-of-mouth publicity, or bypass secondary care entirely for self-medication or alternative healing networks. Consequently, understanding the direct predictive relationship between service quality (SERVQUAL), patient retention, and word-of-mouth (WOM) referral is a strategic necessity for healthcare administrators in this region.

While extensive research exists on service quality within the generic corporate service marketing literature (such as banking, telecommunications, and hospitality), its specific empirical application to secondary healthcare delivery in resource-constrained regional contexts like the Niger Delta remains underdeveloped. Existing local studies frequently focus on tertiary teaching hospitals, leaving a critical conceptual gap regarding the mid-tier secondary institutions that handle the bulk of clinical admissions and specialized outpatient consultations.

Furthermore, the dual modeling of both behavioral intention outcomes—patient retention (the psychological commitment to return to a facility for subsequent medical needs) and word-of-mouth referral (the voluntary advocacy behavior of recommending the facility to peers)—is rarely captured within a unified empirical framework in regional health literature. This study addresses these conceptual and contextual gaps. The broad objective of this research was to examine service quality as an empirical predictor of patient retention and word-of-mouth referral in secondary healthcare facilities within the Niger Delta region of Nigeria.

## Methodology

### Research Design and Context

This study adopted a descriptive, cross-sectional survey research design. This approach allowed the collection of quantifiable data from a representative sample of healthcare consumers at a single point in time, facilitating the empirical testing of predictive relationships. The geographic scope of the study was the Niger Delta region of Nigeria, specifically focusing on public and private secondary healthcare institutions (General Hospitals, District Hospitals, and comprehensive zonal medical centers) across three selected littoral states: Cross River, Delta, and Rivers States. These locations provide a balanced representation of the socio-economic strata, urban-rural dynamics, and health infrastructure distribution characterizing the broader geopolitical zone.

### Population and Sampling Procedure

The target population comprised all adult patients (aged 18 years and above) who had received treatment, underwent diagnostic procedures, or experienced inpatient admission within the sampled secondary healthcare facilities and were preparing for formal discharge or post-treatment follow-up. A multi-stage sampling technique was used:

1. **Purposive Selection:** Selected two public and two private secondary healthcare facilities within each of the three chosen states, yielding twelve target institutions.
2. **Convenience Sampling:** Used due to the unpredictable nature of patient discharge rates and ethical guidelines governing clinical environments.

The sample size was statistically calculated using the Cochran (1977) formula for infinite populations:

n = \frac{Z^2 \cdot p \cdot q}{e^2}

Where:

- Z = standard normal deviation at 95% confidence level (1.96)
- p = estimated proportion of an attribute present in the population (assumed to be 0.5 to maximize sample size)
- q = 1 - p = 0.5
- e = acceptable margin of error (0.05)

This yielded a baseline sample size of approximately 384 respondents. To account for potential non-response bias, missing data, or improperly filled instruments, the sample was inflated by 10%, resulting in 422 structured questionnaires distributed across the target facilities.

### Instrumentation and Operationalization

The primary data collection instrument was a highly structured, self-administered questionnaire titled *Healthcare Service Quality and Patient Behavioral Outcomes Questionnaire (HSQPBOQ)*. The instrument was partitioned into distinct thematic modules:

- **Socio-demographic Profile:** Captured age, gender, educational attainment, and history of facility patronage.
- **Service Quality Predictors:** Operationalized using a modified version of the classic Parasuraman, Zeithaml, and Berry (1988) SERVQUAL model, adapted to reflect clinical service contexts. This comprised five sub-scales:
- **Tangibles (4 items):** Cleanliness, modern medical equipment, visual appeal of signage, and physical appearance of staff.
- **Reliability (4 items):** Accuracy of diagnostic reports, fulfillment of appointment schedules, consistency in billing, and medical error minimization.
- **Responsiveness (4 items):** Speed of frontline registration, promptness of nursing call responses, and willingness of clinical staff to assist.
- **Assurance (4 items):** Technical competence of physicians, perceived safety during clinical interventions, and maintenance of patient confidentiality.
- **Empathy (4 items):** Individualized attention, operating hours tailored to patient convenience, and compassionate communication style.

**Criterion Variables:**

- **Patient Retention (4 items):** Adapted from Zeithaml et al. (1996), measuring the intent to return for future health crises and preference over competitors.
- **Word-of-Mouth Referral (4 items):** Measuring the likelihood of praising the hospital to family, defending it against criticism, and recommending it for specialized care.

All psychometric construct items were measured on a modified 5-point Likert Scale ranging from 5 (Strongly Agree) to 1 (Strongly Disagree).

**Psychometric Evaluation: Validity and Reliability**

To establish content and face validity, the draft instrument was subjected to rigorous review by a panel of three senior healthcare administrators and two psychometric experts in marketing research. They evaluated item clarity, cultural appropriateness for the Niger Delta population, and alignment with the constructs. Their structural feedback was integrated to refine wording and remove clinical jargon.

Construct reliability was established through a pilot study conducted on 40 patients at a secondary facility in an adjacent state (Akwa Ibom State), which did not form part of the final sample. The internal consistency of the constructs was determined using Cronbach's Alpha (\alpha) coefficients. The analysis yielded the following values: Tangibles (\alpha = 0.79), Reliability (\alpha = 0.84), Responsiveness (\alpha = 0.81), Assurance (\alpha = 0.86), Empathy (\alpha = 0.88), Patient Retention (\alpha = 0.83), and Word-of-Mouth Referral (\alpha = 0.85). All coefficients exceeded the conventional threshold of 0.70, confirming the high reliability of the scales.

**Data Collection and Ethical Protocols**

Data collection was carried out over an eight-week period by six trained research assistants who worked closely with hospital public relations units. Questionnaires were administered to patients in outpatient waiting lounges post-consultation, or at point-of-discharge lounges for inpatients. Ethical clearances were formally obtained from the respective Institutional Review Boards and State Ministries of Health.

Informed written consent was obtained from each respondent prior to instrument administration. Participants were assured of complete anonymity, confidential data handling, and their right to withdraw from the survey at any point without affecting their ongoing medical care. Out of the 422 copies administered, 391 were retrieved, of which 384 were found completely free of missing entries or contradictory patterns, resulting in a net usable response rate of 91%.

**Statistical Analysis**

The collected data were cleaned, coded, and processed using SPSS Version 26.0 and AMOS Version 24.0. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarized the demographic attributes and perceived service quality levels. Inferential statistics, including Pearson Product-Moment Correlation and Multiple Linear Regression analysis, were utilized

to evaluate the predictive strength of the independent SERVQUAL dimensions on the twin dependent variables: patient retention and word-of-mouth referral. The structural relationships were modeled at a statistical significance threshold of $p < 0.05$.

## Results

### Demographic and Descriptive Profiles

The demographic analysis indicated that the sample was relatively balanced and representative of the regional healthcare consumer base. Of the 384 respondents, 54.2% (n=208) were female, while 45.8% (n=176) were male. The modal age bracket was 35–44 years, representing 38.5% of the sample, followed by 25–34 years at 29.2%. In terms of educational attainment, 12.5% held primary school certificates, 31.8% had completed secondary schooling, while 55.7% possessed tertiary diplomas or university degrees. Furthermore, 62.3% of the respondents were utilizing public secondary facilities, while 37.7% patronized private entities.

To understand the baseline perceptions of the sample, mean score evaluations across the five service quality dimensions were computed based on the composite 5-point scale.

| Service Quality Dimension | Mean Score | Standard Deviation | Perceived Performance Level |
|---|---|---|---|
| Tangibles | 3.12 | 0.88 | Moderate |
| Reliability | 3.45 | 0.76 | Moderate |
| Responsiveness | 2.89 | 0.94 | Low to Moderate |
| Assurance | 4.01 | 0.54 | High |
| Empathy | 3.24 | 0.81 | Moderate |

### Hypotheses Testing and Inferential Regression Analysis

To determine how service quality dimensions predict patient retention, a multiple regression model was run with Tangibles, Reliability, Responsiveness, Assurance, and Empathy as independent predictors, and Patient Retention as the dependent variable.

The model fit was highly significant:

$$F(5, 378) = 42.618, \quad p < 0.001, \quad R^2 = 0.361, \quad \text{Adjusted } R^2 = 0.352$$

This indicates that the five dimensions of healthcare service quality account for 36.1% of the total variance observed in patient retention behavior within the Niger Delta.

The regression output for Model 1 is presented below.

| Variable | Unstandardized B | Standard Error | Standardized \beta | t-value | p-value |
|---|---|---|---|---|---|
| Constant | 1.104 | 0.215 | — | 5.135 | <0.001 |
| Tangibles | 0.088 | 0.041 | 0.092 | 2.146 | 0.033 |
| Reliability | 0.142 | 0.048 | 0.138 | 2.958 | 0.003 |
| Responsiveness | 0.264 | 0.052 | 0.247 | 5.077 | <0.001 |
| Assurance | 0.211 | 0.059 | 0.198 | 3.576 | <0.001 |
| Empathy | 0.318 | 0.049 | 0.301 | 6.490 | <0.001 |

The results in the table indicate that all five service quality dimensions are positive and statistically significant predictors of patient retention. Empathy emerged as the single strongest predictor ($\beta = 0.301$, $t = 6.490$, $p < 0.001$), followed closely by Responsiveness ($\beta = 0.247$, $t = 5.077$, $p < 0.001$) and Assurance ($\beta = 0.198$, $t = 3.576$, $p < 0.001$). Reliability ($\beta = 0.138$, $t = 2.958$, $p = 0.003$) and Tangibles ($\beta = 0.092$, $t = 2.146$, $p = 0.033$) exhibited significant but lesser relative predictive weight.

To test the second broad hypothesis, a separate multiple regression analysis was conducted with Word-of-Mouth (WOM) Referral as the dependent criterion variable. The overall model fit was strong and statistically valid:

$$F(5, 378) = 51.104, \quad p < 0.001, \quad R^2 = 0.403, \quad \text{Adjusted } R^2 = 0.395$$

This structural model demonstrates that 40.3% of the variation in patients' willingness to generate positive word-of-mouth referrals is explained by the service quality dimensions.

The regression output for Model 2 is presented below.

| Variable | Unstandardized B | Standard Error | Standardized \beta | t-value | p-value |
|---|---|---|---|---|---|
| Constant | 0.895 | 0.198 | — | 4.520 | <0.001 |
| Tangibles | 0.221 | 0.038 | 0.231 | 5.816 | <0.001 |
| Reliability | 0.304 | 0.044 | 0.298 | 6.909 | <0.001 |
| Responsiveness | 0.132 | 0.048 | 0.124 | 2.750 | 0.006 |
| Assurance | 0.187 | 0.054 | 0.176 | 3.463 | <0.001 |
| Empathy | 0.195 | 0.045 | 0.185 | 4.333 | <0.001 |

The table indicates that all dimensions significantly predict word-of-mouth advocacy. However, the structural hierarchy of influence shifts for this outcome variable. Reliability emerged as the premier predictor of positive WOM (\beta = 0.298, t = 6.909, p < 0.001), followed by Tangibles (\beta = 0.231, t = 5.816, p < 0.001). Empathy (\beta = 0.185, t = 4.333, p < 0.001), Assurance (\beta = 0.176, t = 3.463, p < 0.001), and Responsiveness (\beta = 0.124, t = 2.750, p = 0.006) also remained positive and statistically significant contributors to the model.

**Discussion**

The empirical results demonstrate that healthcare service quality is a powerful predictor of post-consumption patient behavioral outcomes within the secondary healthcare ecosystem of the Niger Delta. The confirmation that service quality dimensions account for substantial variance in both patient retention (R^2 = 36.1\%) and word-of-mouth referral (R^2 = 40.3\%) reinforces the core tenet of modern relationship marketing: long-term institutional survival depends on functional service execution.

Looking closely at the individual predictors of patient retention, the finding that empathy (\beta = 0.301) and responsiveness (\beta = 0.247) exerted the highest statistical influence is revealing. This underscores the unique emotional vulnerability of individuals navigating healthcare crises. When patients patronize secondary facilities in the Niger Delta, they often present with heightened anxiety due to regional health burdens and economic stress.

Consequently, clinical encounters characterized by deep interpersonal empathy—where doctors and nurses listen attentively, show genuine compassion, and treat patients with dignity—leave an enduring psychological imprint. This compassionate care acts as a powerful relational anchor, making the patient highly likely to return to that specific facility for future health needs, bypassing closer or cheaper alternatives. This aligns with the relational marketing positions of Berry (1995) and recent African medical marketing evaluations (Osei-Frimpong et al., 2018), which assert that in high-involvement, high-anxiety service environments, interpersonal chemistry outweighs physical environment in building long-term loyalty.

Conversely, when analyzing the drivers of word-of-mouth referral, reliability (\beta = 0.298) and tangibles (\beta = 0.231) rose to structural prominence. This shift in the hierarchy of predictive weight is highly logical. Word-of-mouth referral is a form of social advocacy; when an individual recommends a hospital to a family member or neighbor, they risk their own social capital.

Therefore, a patient will only recommend a facility if they are confident in its functional consistency and structural capability. Reliability manifested as accurate laboratory diagnostics, dependable billing, and consistent clinical efficacy gives patients the cognitive reassurance needed to vouch for the institution.

Similarly, tangibles play a critical role in recommendations within the Niger Delta. Because community members can easily observe physical conditions from the outside, visible aspects like a clean environment, modern diagnostic imaging machinery, neat corporate uniforms, and air-conditioned waiting spaces serve as visible signs of clinical safety. A patient is far more likely to recommend a hospital that looks advanced and structurally well-managed, as these tangible features validate the hospital's underlying medical competence to the public.

**Conclusion**

This study provides empirical evidence that service quality is a multi-dimensional predictor of patient behavioral intentions within secondary healthcare environments in the Niger Delta region of Nigeria. The research shows that clinical delivery cannot be divorced from customer service

management. To build a sustainable patient pipeline, secondary hospitals must look beyond clinical survival rates and actively manage the functional experience of care.

The predictive models evaluated demonstrate that while interpersonal warmth (empathy and responsiveness) locks in long-term patient retention, structural dependability and physical presentation (reliability and tangibles) drive community advocacy via word-of-mouth. Ultimately, managing these dual behavioral outcomes is essential for stabilizing revenues, optimizing resource deployment, and improving public health trust across the regional healthcare architecture.

**Recommendations**

Based on the empirical findings and structural discussions arising from this study, the following recommendations are advanced for action by hospital management boards, health administrators, and public policy architects:

1. **Institutionalize Continuous Compassionate-Care Training:** Hospital administrations must establish mandatory, periodic customer-relationship management (CRM) and empathy-driven communication modules for all frontline personnel, including medical receptionists, nurses, and consulting physicians. This will directly improve the empathy and responsiveness dimensions that drive patient retention.
2. **Optimize Operational Processes to Reduce Waiting Times:** Secondary facilities should implement digital health records systems or lean administrative workflows to minimize bottlenecks at registration, cash collection, and pharmacy points, thereby elevating perceived responsiveness.
3. **Upgrade Physical Infrastructure and Cleanliness Protocols:** Hospital management must prioritize budgetary allocations for facility renovation, reliable power back-ups, clean sanitary amenities, and structured interior signage. Improving these tangibles directly boosts community trust and drives word-of-mouth recommendations.

**Enforce Strict Quality Assurance and Diagnostic Checks:** To protect institutional reliability, hospitals must establish internal audit teams to monitor diagnostic accuracy, reduce medical errors, and guarantee transparent billing practices, thereby protecting the facility's social capital and referral networks.

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