



EFFECT OF PHYSICAL FACILITIES ON PATIENT SATISFACTION IN PUBLIC AND PRIVATE HOSPITALS; EVIDENCE FROM NAROK COUNTY, KENYA

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ABSTRACT

A strong healthcare system forms the foundation of national development by sustaining a healthy, productive population. In Kenya, public hospitals continue to face service quality concerns despite reform efforts. Anchored in the Gap Theory of Service Quality, this study examined how physical infrastructure specifically cleanliness, signage, space and comfort, lighting, ventilation, and accessibility influences patient satisfaction in Narok County, a region experiencing rapid population growth and serving both urban and remote pastoralist communities as a referral hub. Using a cross-sectional survey design with stratified random sampling, data were collected from 1,203 patients across maternity, casualty, and outpatient units. Analysis in SPSS 27 revealed that private hospitals reported higher mean satisfaction (4.136) than public hospitals (3.680), a significant difference confirmed by ANOVA ($F = 41.375, p < 0.05$). The 0.456-point gap, equating to a 12.4% advantage, was largely associated with superior performance in the identified infrastructure sub-variables. The study recommends targeted upgrades to public hospital facilities to improve service delivery and restore public confidence. It further calls for longitudinal research to track the sustained effects of such improvements and to examine inter-county disparities for guiding equitable healthcare reforms.

KEYWORDS: Physical Facilities, Patient Satisfaction, Gap Theory, Healthcare Quality, Private Hospitals, Public Hospitals.

1.0 INTRODUCTION

Healthcare systems worldwide are under constant scrutiny, with physical facilities increasingly acknowledged as key components in shaping patient experiences and satisfaction. A conducive physical environment in hospitals influences not only perceptions of quality but also actual health outcomes. The Government of Kenya, through initiatives aligned with Vision 2030 and the Kenya Health Policy 2014–2030, has prioritized the improvement of healthcare infrastructure. However, disparities remain evident between public and private hospitals, particularly in rural areas like Narok County, where many patients report dissatisfaction with public hospital services.

1.1 Background of Study

1.2 Global Perspective

Recent global evidence shows that hospital physical environments directly shape patient satisfaction, safety, and emotional well-being. Dimensions such as spatial layout, ventilation, lighting, signage, and cleanliness have been linked to improved recovery trajectories and reduced patient anxiety. High-income countries increasingly apply evidence-based design principles to modernize facilities, integrating ergonomic spaces and infection-control measures that enhance both patient trust and staff efficiency (Shetty et al., 2024; Marcheschi et al., 2023; Al Khatib, Samara, & Ndiaye, 2024). These findings emphasize the importance of infrastructure as a determinant of healthcare quality worldwide.

1.3 Regional Perspective

In contrast, many African public hospitals continue to grapple with infrastructural deficits, outdated equipment, chronic overcrowding, and inadequate sanitation, which compromise service quality and erode patient dignity. Studies highlight that these challenges are systemic, reflecting underinvestment and uneven resource distribution across the continent (Tian, 2023; Lamesgen et al., 2025). The persistence of these deficits illustrates the urgent



need for infrastructure-focused reforms to strengthen patient satisfaction and health outcomes in resource-constrained settings.

1.4 Local Perspective

Kenya reflects these broader challenges. A 2023 health census reported that most public facilities lack essential outpatient equipment, with infrastructure consistently identified as a critical predictor of service quality (Clinical Health Kenya, 2025; Olinyo et al., 2025). The gap is particularly pronounced in rural counties, where sparse resources, staffing shortages, and geographic isolation exacerbate inequitable healthcare access and outcomes (Moses et al., 2021; Ministry of Health, 2023; ClinCol Health Systems, 2025). In Narok County, recent investments have expanded facilities and integrated medical training into service delivery, yet systemic obstacles such as procurement inefficiencies, uneven resource allocation, and persistent maternal health concerns continue to undermine performance (Kenya News Agency, 2023; Standard Media, 2025). Addressing these gaps requires targeted infrastructure investment and policy reform to strengthen equity and patient satisfaction.

1.5 Statement of the Problem

Despite Kenya's commitment to healthcare reform and equitable service delivery, public hospitals in rural regions such as Narok County continue to face infrastructural challenges that undermine patient satisfaction (Moses et al., 2021; Ministry of Health, 2023). While private hospitals have advanced through investments in modern technology and patient-friendly environments, public facilities often struggle with poor sanitation, inadequate infrastructure, and limited comfort, contributing to unequal patient experiences across sectors (KIPPRRA, 2017). This disparity highlights persistent gaps in service quality across Kenya's health system.

Guided by the Gap Theory of Service Quality, which emphasizes the mismatch between patient expectations and actual service delivery (Parasuraman, Zeithaml, & Berry, 1985; Zeithaml, Parasuraman, & Berry, 1990), this study investigates how physical infrastructure specifically cleanliness, signage, space and comfort, lighting, ventilation, and accessibility shape patient satisfaction in Narok County hospitals. Although policy frameworks emphasize infrastructure improvement, no empirical studies have explicitly examined these dimensions in both public and private facilities (Olinyo, Kariuki, & Mwangi, 2025; Clinical Health Kenya, 2025). By addressing this gap, the study provides data-driven insights to inform targeted upgrades and guide policy interventions aimed at strengthening equity and service quality in underserved areas

1.6 Research Objective

To assess whether there is a relationship between physical facilities and patient satisfaction in private and public hospitals in Narok County, Kenya.

1.7 Research Hypothesis

H₀: There is no significant relationship between physical facilities and patient satisfaction in public and private hospitals in Narok County, Kenya.

H₁: There is a significant relationship between physical facilities and patient satisfaction in public and private hospitals in Narok County, Kenya.

1.8 Significance of the Study

This study provides actionable evidence on how hospital infrastructure shapes patient satisfaction across public and private facilities in Narok County, Kenya. By identifying infrastructure gaps and their impact on perceptions of care, the findings contribute to Sustainable Development Goal 3 (Good Health and Well-being) and advance Kenya's Universal Health Coverage agenda, which seeks to guarantee equitable access to quality healthcare regardless of location or socioeconomic status.

The results offer clear implications for stakeholders: policymakers can prioritize resource allocation and reform procurement processes; hospital administrators can target upgrades to features that enhance patient experience; and healthcare practitioners can recognize how physical environments influence trust, dignity, and service utilization. Positioning infrastructure improvement as a strategic level, the study emphasizes its role in reducing disparities and strengthening health system performance, particularly in underserved rural areas.

2.0 LITERATURE REVIEW

2.1 Gap Theory of Service Quality

This study is guided by the Gap Theory of Service Quality (Parasuraman, Zeithaml, & Berry, 1985), which defines service quality as the difference between customer expectations and perceived service. Of its five identified gaps, the fifth gap between expected and perceived service is most relevant to patient satisfaction, often reflecting cleanliness, equipment availability, and environmental comfort in hospital settings. Studies in African healthcare systems, including Kumah (2023), affirm the model's applicability, showing that patient perceptions of infrastructure strongly influence satisfaction scores.

However, critics argue that in low-resource environments the model overlooks systemic constraints such as resource shortages, policy inefficiencies, and cultural expectations (Kumah, 2023; Shetty et al., 2024). This limitation is particularly evident in sub-Saharan Africa, where structural inequities often shape patient experiences beyond the immediate service encounter.

Empirical studies comparing public and private hospitals in Kenya and other African settings consistently report higher satisfaction in private facilities, attributed to better infrastructure, sanitation, and patient-centered environments (Charagu, 2021; Karume et al., 2025). Public hospitals, by contrast, are frequently characterized by overcrowding, inadequate equipment, and poor maintenance, which widen the expectation-perception gap. Yet, despite these findings, few studies have explicitly examined how physical infrastructure sub-variables such as cleanliness, signage, space and comfort, lighting, ventilation, and accessibility affect patient satisfaction in both public and private hospitals within rural counties like Narok.

This gap in literature provides the justification for the present study. By applying the Gap Theory of Service Quality to Narok County, the research directly connects global and regional evidence to a local environment where infrastructural deficits remain a critical barrier to equitable healthcare. The study therefore contributes actionable insights into how infrastructure improvements can reduce disparities, strengthen patient trust, and advance Kenya's Universal Health Coverage agenda.

2.2 Conceptual Framework

This study's conceptual framework identifies physical facilities as the independent variable and patient satisfaction as the dependent variable. It is designed to explore how specific physical attributes such as cleanliness, signage, availability of medical equipment, and spatial organization contribute to patient satisfaction in hospital settings. These elements are drawn from the tangible dimension of the Gap Theory of Service Quality, which emphasizes the role of physical evidence in shaping service perceptions.

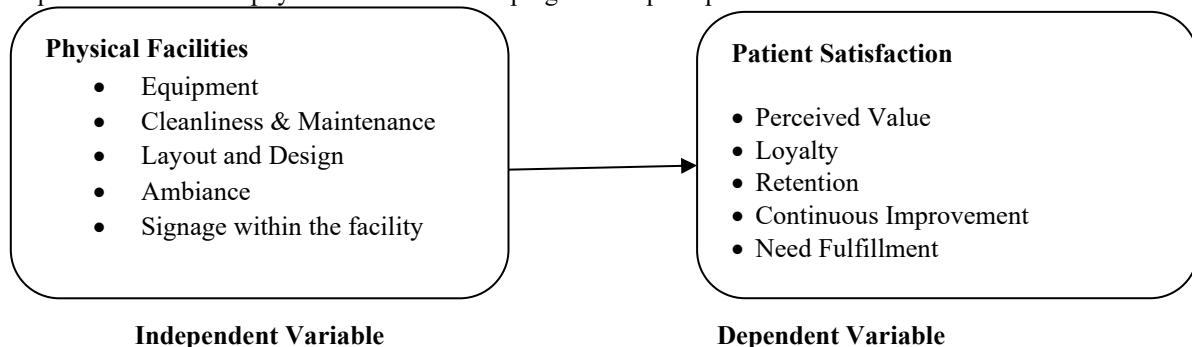


Figure 1: Conceptual Framework

2.3 Empirical Review

Empirical studies across African healthcare systems have consistently demonstrated a strong link between hospital infrastructure and patient satisfaction. In Zimbabwe, Ncube (2025) found that outdated equipment and poor sanitation were significant contributors to dissatisfaction in public hospitals. Similar patterns have been observed in South Africa and Nigeria, where infrastructure quality has been shown to influence patient trust and service utilization. In Tanzania, Msuya et al. (2024) reported that basic improvements in sanitation and waiting areas in rural health centres significantly increased both satisfaction and repeat utilization, reinforcing infrastructure's role as a service quality driver even in low-resource environments.



Rural-focused research provides further dimension to this picture. In Uganda, Kizito et al. (2024) observed that inadequate lighting, poor wayfinding, and overcrowded wards in district hospitals reduced patient confidence in care findings that align with urban-based studies on the importance of cleanliness and comfort. Conversely, a study in rural Ghana by Adjei and Boateng (2023) found that while infrastructure deficits were acknowledged, patients in remote areas often prioritized staff attitude and availability of medicines over facility aesthetics. This suggests that in severely resource-constrained settings, the effects of infrastructure can be moderated by other service quality dimensions.

In Kenyan healthcare settings, particularly in Nairobi, patient satisfaction is strongly influenced by the cleanliness and comfort of physical spaces such as restrooms and waiting areas. Studies have shown that well-maintained environments contribute significantly to positive patient experiences, especially in private facilities where investments in infrastructure are more robust (Seif et al., 2025). However, most Kenyan studies have focused on urban or tertiary hospitals, leaving rural and peri-urban environments under-examined. The role of physical facilities in shaping patient satisfaction in counties such as Narok where geographic isolation, resource constraints, and mixed public-private provision create distinctive service environments remain underexplored.

This study addresses that gap by providing comparative empirical evidence from both public and private hospitals in a peri-urban Kenyan setting. In doing so, it contributes to a more inclusive understanding of infrastructure-related service quality and informs targeted, equity-focused policy reform.

3.0 METHODOLOGY

3.1 Research Design

A cross-sectional design was employed to assess the relationship between physical facilities and patient satisfaction, which is appropriate as it facilitates the generation of preliminary evidence on potential causal links. This methodology suits a population-based survey assessing the influence of service quality on patient satisfaction in public and private hospitals in Narok County, enabling effective comparison of service quality and its effects across different healthcare settings.

3.2 Target Population

The target population included patients visiting Narok County Referral Hospital, Ololulunga District Hospital, Shepherd Hospital, and Medicatia Hospital. Combined, these hospitals serve an estimated 3000 patients daily.

3.3 The Sample

Using Slovin's formula, a sample size of 1203 was determined. Stratified sampling ensured proportional representation across hospitals and departments (maternity, casualty, and outpatient).

$$n = \frac{N}{1 + N(e)^2}$$

N = Population

e = Acceptable margin of error

n = Sample

The research used a 95% confidence interval and a 5% error margin.

3.4 Data Collection

Data was collected using structured questionnaires on a 5-point Likert scale. Instruments were validated by experts and pre-tested with a pilot sample from Cottage Hospital, representing 10% of the sample size.

3.5 Validity and Reliability

Cronbach's Alpha coefficient of 0.846 confirmed internal consistency. Content validity was ensured through expert review.

3.6 Data Analysis

Data analysis was performed using SPSS Version 27. Descriptive statistics were used to summarize the sample characteristics. A one-way ANOVA was conducted to examine differences in patient satisfaction across varying levels of physical facility quality. Assumptions of normality and homogeneity of variances were assessed, with Levene's test confirming that variances between public and private hospitals were statistically homogeneous.



3.7 Ethical consideration

All the data collected from the respondents was handled with the utmost secrecy and the respondents were made aware of the academic goal of data collection. All the respondents were required to fill in a consent form as evidence of voluntary participation. The government permit before conduct of any research permission was also sought from the National Commission for Science, Technology and Innovation (NACOSTI) and other relevant documents.

4.0 RESULTS AND DISCUSSION

4.1 Physical Facilities and patient satisfaction

The study tested the first null hypothesis, which stated:

H₀₁: There is no significant relationship between Physical facilities and Patient satisfaction in private and public hospitals in Narok county.

A one-way ANOVA was conducted to examine differences in patient satisfaction between public and private hospitals, with results summarized in Table 1. Private hospitals reported a significantly higher mean satisfaction score (M = 4.136) compared to public hospitals (M = 3.680), a difference confirmed as statistically significant (F = 41.375, p < 0.05). The 0.456-point gap equating to a 12.4% advantage reflects a meaningful enhancement in patient experience, likely attributable to superior physical environments in private facilities. This substantial disparity affirms the potential impact of strategic investments in public hospital infrastructure to elevate satisfaction, foster patient trust, and enhance the overall appeal of public healthcare services.

Table 1: ANOVA Summary for Physical Facilities and patient satisfaction
Physical Facilities Comparison

Level of Physical Facilities	Count	Sum	Average	Variance
Private Hospitals	992	4100	4.136	0.612
Public Hospitals	992	3650	3.680	0.629

<i>ANOVA Results</i>						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	28.012	1	28.012	41.375	1.8E-10	3.846
Within Groups	1345.672	1982	0.6791			
Total	1373.684	1983				

These results are consistent with prior research demonstrating the pivotal role of the physical environment in shaping perceptions of service quality within healthcare settings. Shetty et al. (2024) found that thoughtfully designed healthcare environments characterized by optimal lighting, noise control, and spatial layout significantly enhance both staff performance and patient satisfaction. Similarly, Darzi et al. (2023) emphasized that cleanliness, comfort, and visual aesthetics remain central to patients' evaluations of service quality across diverse healthcare settings. These contemporary findings reinforce the enduring influence of environmental design on healthcare experiences and outcomes.

5.0 CONCLUSIONS AND POLICY IMPLICATIONS

5.1 Conclusion

The null hypothesis (H₀₁) "There is no significant relationship between Physical facilities and Patient satisfaction in private and public hospitals in Narok county" was rejected. These results clearly reinforce that the quality of physical facilities significantly influences patient satisfaction, with private hospitals generally providing more appealing, accessible, and well-maintained environments than public hospitals.

From a theoretical perspective, these results align with the SERVQUAL model developed by Parasuraman et al. (1988), which identifies tangibles such as physical facilities, equipment, and appearance of personnel as one of the five core dimensions of service quality. In the healthcare settings, well-maintained infrastructure, adequate signage, and clean, comfortable spaces contribute to a sense of professionalism and care, thereby enhancing patient satisfaction.



Thus, the study confirms a statistically significant relationship between physical facilities and patient satisfaction in both public and private hospitals. Private facilities outperformed public ones in infrastructure quality, emphasizing the need for public sector investments in modern medical equipment, hygiene, and spatial design.

5.2 Policy Implications

To improve patient satisfaction, public hospitals should prioritize infrastructure upgrades targeting overcrowding, outdated equipment, and poor signage. These improvements are critical for restoring trust and enhancing service delivery. Private hospitals, meanwhile, should sustain satisfaction levels through ongoing investments in AI-based diagnostic infrastructure, sustainable design, and regular facility audits. Differentiated strategies across both sectors are essential for achieving equitable and responsive healthcare in rural Kenya.

5.3 Suggestions for Further Research

Future research should investigate the long-term impact of infrastructure investments on both patient satisfaction and health outcomes, particularly within resource-constrained settings. Comparative cost-benefit analyses across hospital types could yield valuable insights for optimizing resource allocation. Studies examining the influence of staff responsiveness and providing patient communication on satisfaction would further enrich the understanding of healthcare quality. Additionally, exploring patient experiences of facility use through both quantitative and qualitative perspectives can illuminate the interplay between physical environments and perceived care. Comparative analyses between rural and urban counties are essential to uncover area-specific catalysts, expose systemic inequities, and enhance the generalizability of findings. Such evidence will be instrumental in guiding equity-focused reforms within Kenya's Universal Health Coverage framework.

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