

DEVELOPMENT OF A HEALTHCARE PERCEPTION INDEX TO EVALUATE ACCESSIBILITY, QUALITY, AND TRUST IN INDIAN GOVERNMENT HOSPITAL SYSTEMS

Chinedu Okafor

Department of Economics, University of Lagos College of Social Sciences, Lagos, Nigeria

Amina Bello

Department of Computer Engineering, Abuja Institute of Technology, Abuja, Nigeria

ABSTRACT

The perception of healthcare services in government hospitals plays a critical role in determining utilization patterns, patient satisfaction, and overall trust in public health systems. In India, disparities in service quality, accessibility barriers, and infrastructural constraints have significantly influenced public perceptions of government healthcare institutions. This study proposes the development of a Healthcare Perception Index (HPI) designed to systematically evaluate three core dimensions: accessibility, perceived quality, and institutional trust in government hospital systems. Drawing upon established literature on patient satisfaction, healthcare delivery challenges, and service utilization patterns, the study synthesizes multidimensional indicators into a structured evaluative framework. The index integrates both subjective perceptions and structural healthcare performance variables to enable a more comprehensive assessment of public healthcare effectiveness. The study further conceptualizes methodological approaches for index construction, including weighting mechanisms and normalization strategies for composite scoring. Findings from literature synthesis suggest persistent perception gaps between expected and delivered healthcare services, influenced by infrastructural deficiencies, provider responsiveness, and systemic inefficiencies. The proposed HPI aims to support policymakers in identifying critical bottlenecks and improving healthcare governance outcomes. The study contributes to the field of health systems research by offering a scalable and adaptable analytical tool for evaluating public healthcare performance in developing economies.

KEYWORDS

Healthcare Perception Index, Government Hospitals, Patient Satisfaction, Healthcare Accessibility, Service Quality, Institutional Trust, Public Health Systems, India, Healthcare Evaluation.

INTRODUCTION

Background of the Study

Volume 13, ISSUE- 09 (2025)

Public healthcare systems in developing countries, particularly India, face persistent challenges related to infrastructure, workforce adequacy, and service delivery efficiency. Government hospitals serve as the primary healthcare access point for a large proportion of the population, especially in rural and economically disadvantaged regions. However, perceptions of care quality and service reliability often determine whether individuals choose public or private healthcare facilities.

Studies indicate that patient perception is shaped by a combination of clinical quality, interpersonal communication, waiting time, accessibility, and institutional responsiveness (Ardey, 2015). In the Indian context, these perceptions are often negatively influenced by systemic inefficiencies and resource constraints. Research highlights significant gaps in provider training and healthcare delivery quality across both rural and urban settings (Das et al., 2012).

Patient satisfaction studies conducted in various Indian states reveal mixed outcomes regarding public healthcare services. For instance, satisfaction levels in government hospitals are frequently linked with infrastructural adequacy and staff behavior rather than purely clinical outcomes (Kumari et al., 2009). Similarly, Harnagle, Sagar, and Binu (2014) emphasize that patient satisfaction in multi-specialty government hospitals is strongly associated with waiting time, communication effectiveness, and perceived competence of healthcare staff.

Problem Statement

Despite ongoing healthcare reforms and policy interventions, India continues to struggle with inconsistent public perceptions of government hospital services. Existing evaluation frameworks often focus on isolated indicators such as patient satisfaction or hospital efficiency, lacking an integrated approach that combines accessibility, quality, and trust into a unified measurement system. There is a need for a comprehensive index that captures the multidimensional nature of healthcare perception and provides actionable insights for policy improvement.

Research Objectives

The primary objectives of this study are:

1. To identify key dimensions influencing public perception of government hospital services in India.
2. To develop a structured Healthcare Perception Index (HPI) incorporating accessibility, quality, and trust indicators.
3. To analyze the interrelationship between healthcare service delivery and patient perception outcomes.

4. To provide a scalable framework for evaluating government healthcare performance.

Scope and Significance

The study focuses on government hospitals in India and their perceived service delivery effectiveness. The proposed index is intended for policymakers, healthcare administrators, and researchers aiming to evaluate and improve public healthcare systems. Given the increasing emphasis on universal health coverage, understanding perception dynamics becomes crucial for improving healthcare utilization and trust in public institutions.

Literature Review

Patient Perception and Satisfaction in Healthcare Systems

Patient perception is widely recognized as a multidimensional construct influenced by clinical, behavioral, and infrastructural factors. Ardey (2015) highlights that expectations from primary healthcare providers significantly affect perceived satisfaction levels, suggesting that perception is not solely outcome-based but also expectation-driven. Similarly, Assefa, Mosse, and Michael (2011) demonstrate that client satisfaction is closely linked with service delivery efficiency and interpersonal communication in hospital settings.

In Indian public hospitals, satisfaction levels vary significantly depending on regional infrastructure and resource availability. Kumari et al. (2009) found that patients in Lucknow district government hospitals reported moderate satisfaction, with dissatisfaction primarily related to waiting times and facility conditions.

Quality of Healthcare Delivery in Government Hospitals

Healthcare quality remains a major determinant of patient perception. Studies indicate that structural deficiencies and inadequate provider training contribute to poor service quality outcomes. Das et al. (2012) reveal substantial gaps in provider competence in both rural and urban India, indicating systemic challenges in healthcare workforce development.

Bajpai (2014) further discusses structural challenges in public hospitals, including resource shortages, administrative inefficiencies, and infrastructural limitations. These factors collectively influence perceived healthcare quality and trust in public institutions.

Harnagle, Sagar, and Binu (2014) emphasize that quality perception in government hospitals is closely tied to service responsiveness and communication effectiveness. Their study highlights that even in multi-specialty hospitals, perceived quality gaps persist due to systemic inefficiencies.

Accessibility and Utilization of Healthcare Services

Accessibility is a core dimension influencing healthcare perception. Nandi, Schneider, and Dixit (2017) analyze hospital utilization patterns under government insurance schemes and highlight disparities in access between public and private healthcare systems. Their findings suggest that financial protection alone does not guarantee equitable access unless infrastructural and geographical barriers are addressed.

Chauhan (2011) emphasizes broader public health challenges in India, including uneven distribution of healthcare facilities and rural-urban disparities. These accessibility issues directly influence patient perceptions of government hospitals.

Trust in Public Healthcare Institutions

Institutional trust is a critical yet often underexplored dimension in healthcare perception studies. Trust is shaped by previous experiences, perceived competence of healthcare providers, and system reliability. Debnath and Ray (2019) highlight perception gaps between patients and their families regarding service utilization in government hospitals, indicating inconsistent trust levels in public healthcare systems.

Harnagle, Sagar, and Binu (2014) also reinforce that trust in government hospitals is significantly influenced by perceived service consistency and staff behavior, suggesting that trust is both a behavioral and systemic outcome.

Research Gap

The reviewed literature indicates that most studies focus on isolated constructs such as patient satisfaction, service quality, or healthcare utilization. However, there is a lack of integrated measurement frameworks that combine accessibility, quality, and trust into a single evaluative index. Furthermore, existing studies do not adequately address the need for a standardized tool that can be used across diverse healthcare settings in India. This gap necessitates the development of a Healthcare Perception Index (HPI) that can provide a holistic evaluation of government hospital performance.

Transition to Methodology

Based on the identified gaps in literature, the next section will present the conceptual and methodological framework for developing the Healthcare Perception Index, including indicator selection, normalization techniques, and weighting strategies.

Methodology

Research Design

This study adopts a conceptual analytical and framework development approach, integrating findings from secondary literature to construct a multidimensional Healthcare Perception Index (HPI). The research is

designed as a qualitative-analytical model-building study, where existing empirical evidence is synthesized to develop a structured evaluative tool for government hospital systems in India.

The methodological foundation is grounded in health systems evaluation theory, which emphasizes that healthcare performance must be assessed through combined indicators of accessibility, quality, and institutional trust rather than isolated metrics. This aligns with prior findings that patient perception is a composite construct influenced by structural and behavioral determinants (Ardey, 2015; Assefa et al., 2011).

Conceptual Framework of Healthcare Perception Index (HPI)

The proposed HPI is structured around three primary dimensions:

(A) Accessibility Index (AI)

This dimension evaluates ease of access to healthcare services in government hospitals.

Key indicators include:

- Geographic proximity to hospitals
- Waiting time for consultation
- Availability of medical staff
- Affordability of services
- Infrastructure adequacy

Accessibility is strongly influenced by systemic inequalities in healthcare distribution across rural and urban India (Chauhan, 2011; Nandi et al., 2017).

(B) Quality Index (QI)

Quality reflects both clinical and non-clinical aspects of healthcare delivery.

Key indicators include:

- Diagnostic accuracy
- Provider competence
- Communication quality
- Treatment effectiveness
- Hygiene and facility standards

Research highlights that quality gaps in Indian healthcare systems are significantly driven by insufficient

provider training and inconsistent service standards (Das et al., 2012). Harnagle, Sagar, and Binu (2014) further emphasize that perceived quality is strongly linked to responsiveness and interpersonal communication in government hospitals.

(C) Trust Index (TI)

Trust represents the psychological and experiential confidence of patients in public healthcare institutions.

Key indicators include:

- Reliability of treatment outcomes
- Transparency in hospital administration
- Ethical behavior of healthcare staff
- Patient confidence in diagnosis
- Continuity of care

Trust is shaped by prior service experiences and perceived institutional credibility. Studies show that perception gaps between patients and healthcare systems directly influence trust formation (Debnath & Ray, 2019).

Construction of Healthcare Perception Index (HPI)

The HPI is constructed using a composite index methodology, following three steps:

Step 1: Normalization of Indicators

All indicators are standardized using a min-max normalization technique:

$$X' = \frac{X - X_{\min}}{X_{\max} - X_{\min}} \quad X' = \frac{X - X_{\min}}{X_{\max} - X_{\min}}$$

This ensures comparability across different measurement scales.

Step 2: Weight Assignment

Weights are assigned based on literature significance:

- Accessibility (0.30)
- Quality (0.40)
- Trust (0.30)

The higher weight assigned to quality reflects its dominant influence on patient satisfaction and perception

outcomes (Kumari et al., 2009; Sodani et al., 2010).

Step 3: Composite Index Formation

$$\begin{aligned} HPI &= (AI \times 0.30) + (QI \times 0.40) + (TI \times 0.30)HPI \\ &= (AI \times 0.30) + (QI \times 0.40) + (TI \times 0.30)HPI \\ &= (AI \times 0.30) + (QI \times 0.40) + (TI \times 0.30) \end{aligned}$$

The final index value ranges between 0 and 1, where higher values indicate better perceived healthcare performance.

Analytical Approach

The framework uses a multi-dimensional aggregation approach, enabling:

- Comparative evaluation across hospitals
- Identification of weak performance dimensions
- Policy-level decision support

The model also allows scenario simulation, where improvements in one dimension (e.g., accessibility) can be analyzed for its impact on overall perception scores.

Hypothetical Application Example

Consider two government hospitals:

- Hospital A has high accessibility but moderate quality and trust.
- Hospital B has moderate accessibility but high quality and trust.

Using the HPI framework, Hospital B may achieve a higher composite score due to stronger quality and trust components, demonstrating that perception is not solely dependent on access but on holistic service delivery.

This aligns with findings that patient satisfaction is strongly influenced by quality of interaction and service reliability rather than infrastructure alone (Harnagle et al., 2014).

Results / Findings

The synthesis of literature and conceptual modeling yields several key findings regarding healthcare perception in Indian government hospitals.

Firstly, accessibility remains a foundational but insufficient determinant of positive healthcare perception. While physical proximity and affordability improve service utilization, they do not guarantee satisfaction or

trust. Studies consistently show that patients continue to report dissatisfaction even when access barriers are minimized, indicating the dominance of quality-related concerns (Chauhan, 2011; Nandi et al., 2017).

Secondly, healthcare quality emerges as the most influential dimension affecting perception outcomes. Deficiencies in provider training, communication gaps, and inconsistent service delivery significantly reduce patient satisfaction levels. Das et al. (2012) highlight systemic quality gaps in both rural and urban healthcare settings, reinforcing the need for standardized service protocols. Similarly, Harnagle, Sagar, and Binu (2014) found that patient satisfaction in government hospitals is highly dependent on responsiveness and interpersonal interaction quality.

Thirdly, trust is identified as a fragile and cumulative construct influenced by repeated healthcare experiences. Patients develop trust based on reliability of diagnosis, ethical conduct of staff, and transparency in treatment processes. However, perception gaps between expectations and actual service delivery often weaken institutional trust (Debnath & Ray, 2019).

Finally, the integrated Healthcare Perception Index demonstrates that healthcare perception is a multidimensional construct, where improvements in one dimension alone cannot ensure overall satisfaction. Balanced improvement across accessibility, quality, and trust is essential for enhancing public healthcare perception in India.

Discussion

The findings of this study highlight the structural complexity of healthcare perception in government hospital systems. The proposed HPI framework demonstrates that healthcare evaluation must move beyond traditional satisfaction surveys toward integrated analytical models.

A key theoretical implication is the validation of healthcare perception as a multi-layered construct, consistent with behavioral healthcare models that emphasize cognitive, experiential, and institutional dimensions. The strong influence of quality over accessibility suggests that service delivery efficiency is more critical than mere availability of infrastructure.

Comparatively, existing literature such as Kumari et al. (2009) and Sodani et al. (2010) supports the finding that patient satisfaction is strongly linked to service responsiveness and interpersonal behavior. However, this study extends previous research by integrating trust as a measurable dimension within a composite index.

One major contradiction observed is between healthcare accessibility improvements and stagnant satisfaction levels. Despite government initiatives to improve infrastructure and coverage, perception gaps

persist due to unresolved quality issues. This indicates that policy interventions focusing solely on access may not yield proportional improvements in public perception.

From a practical standpoint, the HPI provides a decision-support tool for healthcare administrators. It enables identification of weak-performing hospitals and supports targeted intervention strategies. However, limitations include the reliance on secondary literature for framework development and the absence of empirical validation using primary data.

Conclusion

This study developed a structured Healthcare Perception Index (HPI) to evaluate accessibility, quality, and trust in Indian government hospital systems. The findings reveal that healthcare perception is a multidimensional construct influenced most significantly by service quality, followed by accessibility and institutional trust.

The proposed framework offers a scalable and adaptable tool for policymakers to assess healthcare performance holistically. It emphasizes the need for integrated improvements across all dimensions rather than isolated reforms.

Future research should focus on empirical validation of the HPI using large-scale patient data and statistical modeling techniques such as factor analysis or structural equation modeling. Additionally, regional customization of the index could enhance its applicability across diverse healthcare contexts in India.

REFERENCES

1. Ardey R. Patient perceptions and expectations from primary healthcare providers in India. *J Fam Med Primary Care*. 2015;4(1):53–63.
2. Assefa F, Mosse A, Michael YH. Assessment of Clients' Satisfaction With Health Service Deliveries At Jimma University Specialized Hospital. *Ethiop J Health Sci*. 2011;21(2):101–9.
3. Bajpai V. The Challenges Confronting Public Hospitals in India, Their Origins, and Possible Solutions. *Adv Pub Health*. 2014;898502:1–27.
4. Chauhan LS. Public health in India: issues and challenges. *Indian J Pub Health*. 2011;55(2):88–91.
5. Das J, Holla A, Das V, Mohanan M, Tabak D, Chan B. In urban and rural India, a standardized patient study showed low levels of provider training and huge quality gaps. *Health Aff (Millwood)*. 2012;12:2774–84.
6. Debnath R, Ray S. Identifying Perception Gap in Utilization of Services by Patients & Their Family Members in Government and Private Hospitals of West Bengal. *Int J Health Sci Res*. 2019;10(3):1–9.

7. Harnagle R, Sagar TV, Binu J. Original Research Article Patient Satisfaction assessment amongst patients in a Multi-speciality Government hospital India. *Int J Curr Microbiol App Sci.* 2014;34(1):35–42.
8. Kumar A, Devi C. Patients' Attitude Regarding Government Hospital: A Study On General Hospital Sirsa. *J Radix Int Educ Res Consortium.* 2018;4(11):1–13.
9. Kumari R, Idris MZ, Bhushan V, Khanna A, Agarwal M, Singh SK. Study on Patient Satisfaction in the Government Allopathic Health Facilities of Lucknow District. *Indian J Commun Med.* 2009;34(1):35–42.
10. Mahapatra P. A patient satisfaction survey in public hospitals. In *Article in Journal (Academy of Hospital Administration.* 2001;.
11. Nandi S, Schneider H, Dixit P. Hospital utilization and out of pocket expenditure in public and private sectors under the universal government health insurance scheme in Chhattisgarh State, India: Lessons for universal health coverage. *Plos ONE.* 2017;12(11):e0187904.
12. Sodani PR, Kumar RK, Srivastava J, Sharma L. Measuring patientsatisfaction: A case study to improve quality of care at public health facilities. *Indian J Commun Med.* 2010;35(1):52–6.