SERVICE QUALITY ASSESSMENT IN HEALTH CARE SECTOR: THE CASE OF HYDERABAD HOSPITALS.

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Abstract

This study's main goal is to assess the impact of the service quality dimensions—assurance, empathy,—on patient satisfaction and loyalty. Through systematic methodology, this study seeks to provide important new understandings of how these aspects of service quality affect patient outcomes and hospital loyalty.

In order to accomplish these goals, a representative sample of patients from different hospitals in Hyderabad were asked to participate in the study, which used a quantitative research design and survey instruments to collect data. To examine the correlations between the variables, the study uses strong statistical methods such as partial least squares (PLS) regression, factor analysis, and structural equation modeling (SEM).The study emphasizes how crucial it is for healthcare services to continuously improve their quality to improve patient outcomes and institutional reputation.

Keywords : *Service Quality Dimensions, Assurance , Empathy ,Patient Satisfaction , Patient Loyalty, Hyderabad.*

1.Introduction

The Hospital Industry in India

The healthcare sector in India is one of the largest and fastest-growing industries, driven by its expanding coverage, services, and increasing expenditure by both public and private players. The hospital industry, a critical component of the healthcare sector, has witnessed significant growth over the past decades, fueled by advancements in medical technology, rising health awareness, and increased accessibility to healthcare services.

The hospital industry in India has been on an accelerated growth trajectory, driven by economic development, increased healthcare spending, technological advancements, and the rise of medical tourism. This sector's expansion reflects the broader growth trends within the Indian healthcare industry, which is projected to continue its upward momentum.

India's economic growth has played a pivotal role in the expansion of the hospital industry. As the country's GDP continues to grow, reaching an estimated $3 trillion in 2023, disposable incomes have also increased, allowing more people to afford quality healthcare services. The middle class, expected to constitute 63% of the population by 2025, demands better healthcare, fueling the growth of private hospitals and specialty clinics.

Government initiatives have significantly contributed to the growth of the hospital sector. Programs such as Ayushman Bharat, launched in 2018, aim to provide health coverage to over 100 million families, offering up to INR 5 lakh per family per year for secondary and tertiary

care hospitalization. This initiative has increased the demand for hospital services, especially among the economically vulnerable sections of society.

The penetration of health insurance has been a major growth driver. Health insurance coverage in India has expanded, with the total number of people covered by health insurance policies increasing from 29% in 2015-16 to approximately 37% in 2021-22. This growth in coverage has made healthcare services more accessible and affordable, thereby increasing the utilization of hospital facilities.

2. Literature Review

Patient happiness and loyalty are important indicators of the effectiveness and caliber of healthcare facilities in the context of providing healthcare services. Because of this, much research has tried to analyze the complex relationship between patient happiness, service quality, and loyalty. Among these, a noteworthy study with the title "A Study on Service Quality Assessment of Select Hospitals in Hyderabad" examined this complex dynamic with an emphasis on hospitals in Hyderabad, a thriving metropolis.

The study, which was carried out with great care and attention to detail, sought to assess the level of service offered by a few hospitals in Hyderabad and how that service might affect patient loyalty. Using the well used SERVQUAL scale, the study examined five core dimensions: tangibles, assurance, responsiveness, consistency, and empathy. These aspects, which cover everything from the physical surroundings to the interpersonal interactions between healthcare workers and patients, serves as the cornerstone around which patient experiences are constructed.

The application of Partial Least Squares Structural Equation Modeling (PLS-SEM) was essential to the study's methodology. The investigation of complex interactions between the independent variables—represented by the five service quality dimensions—the mediator (patient satisfaction), and the final dependent variable (patient loyalty) was made easier by this statistical method. Because of its adaptability and stability, PLS-SEM is especially good at managing the complexity that comes with evaluating healthcare services. It provides insights into subtle correlations without imposing strict criteria on data distribution.

The study's conclusions offer a comprehensive grasp of the ways in which every aspect of service quality affects patient pleasure, which in turn determines patient loyalty. Patients' perceptions and satisfaction levels are significantly influenced by tangibles, including the physical components of the hospital environment. Trustworthiness, promptness, confidence, and compassion, each with its own weight, all helped to mold patient experiences and build a sense of loyalty to medical facilities.

3.Research Methodology

This study's research methodology chapter describes the methodical strategy and procedures used to evaluate the level of care provided by a few chosen hospitals in Hyderabad

and how that affects patient loyalty and satisfaction. The research design, data collection techniques, sample selection, and analytical processes supporting the study are outlined in this chapter. It guarantees the authenticity and trustworthiness of the results and offers a thorough foundation for comprehending the methodology of the study.

This study's main goal is to assess the impact of the service quality dimensions—assurance, empathy,—on patient satisfaction and loyalty. Through systematic methodology, this study seeks to provide important new understandings of how these aspects of service quality affect patient outcomes and hospital loyalty.

In order to accomplish these goals, a representative sample of patients from different hospitals in Hyderabad were asked to participate in the study, which used a quantitative research design and survey instruments to collect data. To examine the correlations between the variables, the study uses strong statistical methods such as partial least squares (PLS) regression, factor analysis, and structural equation modeling (SEM).

4. Hypothesis

- **H_1: Assurance significantly influences the satisfaction of the patients.**

This hypothesis posits that the level of assurance provided by hospital staff (including competence, courtesy, credibility, and security) has a significant positive effect on patient satisfaction.

- **H_2: Empathy significantly influences the satisfaction of the patients.**

This hypothesis suggests that the degree of empathy shown by hospital staff (including caring, individualized attention, and understanding of patient needs) significantly enhances patient satisfaction.

- **H_3: Empathy has a significant indirect effect on loyalty towards the hospital through the satisfaction of the patients.**

The degree of empathy shown by hospital staff indirectly affects patient loyalty by first influencing patient satisfaction.

- **H_4: Assurance has a significant indirect effect on hospital loyalty through patient satisfaction.**

The level of assurance provided by hospital staff indirectly affects patient loyalty by first influencing patient satisfaction.

5. Sampling Design

Population

Patients from Hyderabad, India's four main hospitals make up the study's population. These medical institutions, which include both governmental and private healthcare facilities, have been chosen to offer a thorough representation of Hyderabad's healthcare industry. The hospitals that were chosen are:

Government Hospitals:

- Osmania General Hospital
- Gandhi Hospital

Private Hospitals:

- KIMS Hospital
- Yashoda Hospital

These hospitals were picked because they are among Hyderabad's most renowned medical facilities, catering to a wide range of patients. The study's capture of a diverse range of patient experiences and service quality perceptions is ensured by the inclusion of both government and private hospitals.

6. Sample Size

The sample size of 383 was determined by applying the Cochran formula, which is used to determine sample size for an infinite population. However, the sample size was doubled, resulting in a final size of 766, to produce more accurate and trustworthy results.

Patients at the four hospitals were given one thousand surveys. In order to cover a wide range of healthcare services, the distribution method made sure that surveys were provided to patients from different wards and departments within each hospital. The following is a thorough explanation of the sampling procedure:

Data gathering:

Both primary data and secondary data are used in this research investigation. The main information was gathered by a survey technique with a standardized questionnaire. The secondary data was gathered from books, journals related to the service Quality, and Hospital websites.

7. Data Analysis and Interpretation

In this study, we analyzed the data on service quality aspects and their influence on patient loyalty at a few Hyderabadi hospitals using Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM is a strong statistical method that works especially well in exploratory studies with complex variable correlations and high model complexity

7.1 Data Collection and Preparation

Structured questionnaires utilizing the SERVQUAL scale, which evaluates five aspects of service quality—tangibles, assurance, responsiveness, and empathy—were used to gather data. To guarantee a thorough grasp of the patients' perspectives and experiences, the survey was directed at patients belonging to different demographic categories.

Thorough preprocessing was done on the data to guarantee accuracy and dependability. This required confirming the normalcy of the data distribution and looking for outliers and missing numbers. After the dataset was cleaned, PLS-SEM analysis could begin, enabling the evaluation of several dependent and independent variables at once.

7.2 Demographic Profile of the patients

The study's patient demographic profile offers a thorough picture of the varied population in Hyderabad that makes use of hospital services. This profile ensures a comprehensive overview of the patient base by including important demographic factors including age, gender, socioeconomic position, and medical conditions.

7.3 Gender Profile of the patients

Gender	Frequency	Percentage
Male	422	55.09%
Female	344	44.91%
Total	**766**	**100%**

Table :1 Gender frequency of the patients

Gender frequency of the patients

The distribution of patients by gender is displayed in the frequency table above. Of the 766 patients who were surveyed in total:

Male patients make up 422 (55.09%): This suggests that men make up the majority of the patients polled.

Female patients make up 344 (44.91%): This reveals that women make up slightly less than half of the patient population.

7.4 Age Profile of the Patients

Age Group (Years)	Frequency	Percentage
18-25	0	0.00%
26-35	72	9.40%
36-45	172	22.45%
46-55	306	39.95%
56-65	208	27.15%
Above 65	8	1.05%
Total	**766**	**100%**

Table:-2

7.5 Education Qualification of Patients

Education Qualification	Frequency	Percentage
UG (Undergraduate)	362	47.25%
PG (Postgraduate)	222	28.98%
PhD	32	4.18%
Others	150	19.58%
Total	**766**	**100%**

Table:-2.1

SEM Analysis

VIF Inner

In structural equation modeling, or SEM, the Variance Inflation Factor (VIF) is used to find multicollinearity between the predictor constructs in the inner model. High levels of correlation between predictor variables lead to multicollinearity, which can distort standard errors and have an impact on the stability and interpretation of regression coefficients. A VIF score of less than three, which denotes no significant multicollinearity, is usually regarded as acceptable.

	Assurance	Empathy	Loyalty towads Hospital	Reliability	Responsiveness	Satisfaction of the Patients
Assurance						1.948
Empathy						2.446

Assurance (VIF = 1.948): Assurance's VIF score is less than 3, meaning that there is no discernible multicollinearity between Assurance and the other predictor constructs in the model. This shows that Assurance in the SEM model may be trusted to function as an independent predictor.

Empathy (VIF = 2.446): Empathy's multicollinearity levels are deemed acceptable as indicated by the VIF value being below 3. In the SEM model, empathy can be regarded as a trustworthy independent predictor with a low probability of multicollinearity.

interpreting the structural relationships among the constructs.

R-square

The coefficient of determination, or R-square (R^2) number, shows how much of the variance in the dependent variable can be accounted for by the independent variables in the model. Higher explanatory power for the model is indicated by an R-square value that is closer to 1.

	R-square	R-square adjusted

Loyalty towads Hospital	0.371	0.37
Satisfaction of the Patients	0.635	0.633

Table 2.2 R-Square

Hospital Loyalty (R2 = 0.371, Adjusted R2 = 0.37): An R-square value of 0.371 means that the variables that are not dependent in the model (Assurance, Empathy, Reliability, Responsiveness, Tangibles, and Patient Satisfaction) account for 37.1% of the variance in Hospital Loyalty. This amount of explanatory power is moderate. In social science research, where R2 values between 0.3 and 0.5 are frequently seen as good considering the multifaceted nature of human behavior and attitudes, it is acceptable even though it is not a very high value.

Patient satisfaction (R2 = 0.635, R2 adjusted = 0.633): Within acceptable bounds for social science study, the R2 value of 0.371 is obtained. It shows the model can account for a considerable amount of the variation in patient loyalty but leaves a large percentage unexplained, pointing to the possibility that other factors should be considered. Strong explanatory power is indicated by the R2 value of 0.635, which suggests that the model does a good job of capturing the variables that affect patient satisfaction.

According to these R-square values, the model's explanatory power for the dependent variables ranges from reasonable to strong. These values are within acceptable ranges for previous studies on related parameters, hence the model is deemed robust and dependable for additional examination. This entails investigating the route coefficients, indirect effects, and mediation effects to obtain a greater understanding of the connections among patient happiness, loyalty, and service quality aspects.

Indirect Relations and Hypothesis

Hypothesis	**Predictor Variable**	**Path Relation**	**Beta Value(β)**	**Control Limits (2.5% - 97.5%)**		**P - Value**
H1	Assurance	Assurance ->Loyalty towads Hospital	0.04	0.035	0.535	0.046
H2	Empathy	Empathy ->Loyalty towads Hospital	0.088	0.003	1.092	0

Hypothesis 1 (H1): Assurance significantly influences the satisfaction of the patients.

There is a positive correlation between assurance and hospital loyalty, as indicated by the beta value (β) of 0.04. This figure shows the standardized coefficient, which, when all other factors are held equal, indicates that loyalty to the hospital rises by 0.04 standard deviations for every standard deviation increase in assurance. There isn't much of a direct relationship, as seen by the effect size. The range of the control limits is 0.035 - 0.535. The beta coefficient's 95% confidence interval is shown by these limitations. We can be quite certain that there is a positive correlation between assurance and hospital loyalty because this interval does not contain zero. Given that the p-value of 0.046 is below the conventional significance level of 0.05, it may be

concluded that there is a statistically significant correlation between assurance and hospital loyalty.

The association between assurance and hospital loyalty is statistically significant (p = 0.046), despite the weak effect size (β = 0.04). This shows that patients' perceptions of the hospital's reliability and confidence in its staff and services, or assurance, have a significant, if little, influence on how devoted they are to the facility. Although assurance is significant, there may be other factors that have a greater impact on patient loyalty, as indicated by the tiny beta value. Hospital management should also consider other aspects of service quality, such as empathy, dependability, responsiveness, and tangibles, which may have more significant effects, in addition to assurance.

Assurance is a crucial part of the entire service quality framework in hospitals, even though it has a tiny but considerable positive impact on patient loyalty. Even if its impact is small, it does contribute to patient loyalty and should be included in a holistic plan to raise patient satisfaction and loyalty.

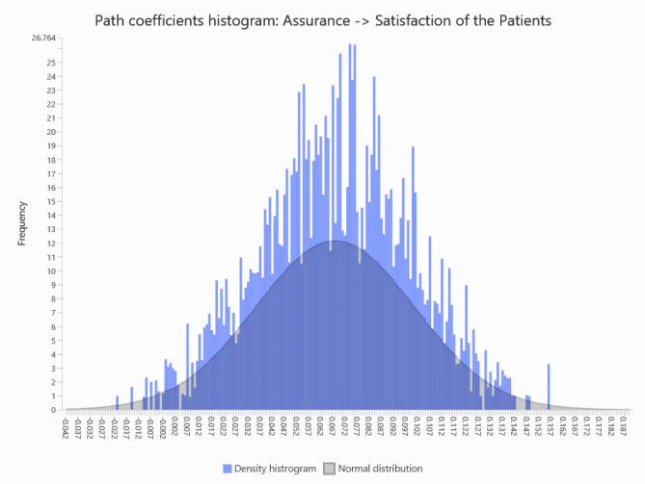


Figure.1 Path coefficients histogram - Assurance - Satisfaction of the Patients

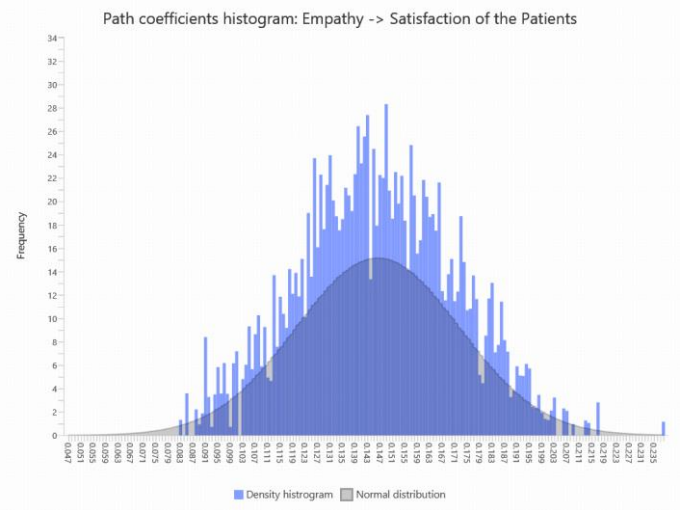
Hypothesis 2 (H2): Empathy significantly influences the satisfaction of the patients.

Empathy and hospital loyalty have a positive correlation, as indicated by the beta value (β) of 0.088. This number is the standardized coefficient, meaning that, when all other factors are held constant, loyalty to the hospital rises by 0.088 standard deviations for every standard deviation increase in empathy. The range of the control limits is 0.003 - 1.092. The beta coefficient's 95% confidence interval is shown by these limitations. We can be quite certain that there is a positive correlation between empathy and hospital loyalty because this interval does not contain zero. Given that the p-value of 0.000 is significantly less than the conventional significance level of 0.05, it can be concluded that there is a strong statistical connection between empathy and hospital loyalty.

Empathy and hospital loyalty have a statistically significant link (p = 0.000), with a bigger impact size (β = 0.088) than assurance, albeit still quite minor. This implies that improving

patient loyalty is significantly impacted by empathy, which is the capacity of medical staff to comprehend and experience patients' emotions. Although empathy has a greater effect than assurance, patient loyalty is still influenced by other factors. To increase patient loyalty, hospitals should keep improving other aspects of service quality in addition to empathy.

Patient loyalty to hospitals is strongly influenced by empathy, underscoring the need of comprehending and attending to patients' emotional needs. To increase patient happiness and loyalty, hospitals should emphasize empathy as a crucial element of their service quality approach in addition to improving other service dimensions.



Findings, Suggestions and Conclusion

- The somewhat male predominance of the patient population suggests that there is a need for healthcare services that address male health issues while simultaneously providing equal treatment for female patients.
- Most patients are in the age range of 36 to 65, with the largest age group being 46 to 55. This group is perhaps more prone to be concerned about aging and long-term illnesses.
- Salaried employees make up the largest category of patients, followed by unemployed individuals. Healthcare services must be flexible and reasonably pricedto meet the needs of these populations, as well as their schedules and budgetary limitations.
- A significant percentage of patients hold a bachelor's or master's degree. This group of educated people probably hashigh standards for thorough information and superior medical care.

Suggestions

- Create health initiatives that focus on prevalent male health problems. Provide adjustable appointment times to suit men who work.

- Improve the services provided to women's health, including preventative care and specialist programs for gynecology, breast cancer screening, and maternity health.
- For Individuals Ages 26 to 35: Give special attention to wellness initiatives, family planning, and antenatal care.
- For 36–45 Years: Offer assistance in handling midlife health concerns, such as stress reduction and preventing chronic illnesses.
- For Individuals Ages 46 to 55: Improve routine health screenings and chronic disease management programs.
- Hospitals should fund ongoing training initiatives for employees to boost their self-assurance, professionalism, and communication abilities. This would improve the level of assurance given to patients.
- Building confidence and trust with patients can be facilitated by maintaining open and honest communication, which in turn can increase patient loyalty.
- To achieve a more substantial overall improvement in patient loyalty, hospitals should prioritize assurance while simultaneously improving other aspects of service quality, such as empathy, reliability, responsiveness, and tangibles.

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