

The Psychological Influence of the Implementation of Quality Measures on the Satisfaction of Patients

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Abstract

Introduction: The healthcare sector is seeing increased competition as a consequence of the growth of both public and private facilities. To establish a strong hospital brand and satisfying patients to maintain and gain their loyalty, this circumstance requires the participation and assistance of the hospitals.

Objectives: Therefore, delivering high-quality service would guarantee patients' contentment and loyalty to continue using the examiner.

Methods: This study's findings analyse how patients' satisfaction and loyalty are impacted by hospital image and service quality at a public hospital in Terengganu. The postulated hypothesis model in the research was put to the test using structural equation modelling (SEM).

Results: This research shows that, although hospital image had no manipulation on patients' loyalty; it had an important impact on their pleasure. Additionally, patient loyalty was significantly influenced by how satisfied the patients were.

Conclusions: This research also makes it clear that the contentment and loyalty of the patients were directly impacted by the service quality offered by the hospital. Therefore, a hospital's excellent level of care will affect its patients' contentment and loyalty, and a strong, appealing hospital image is a crucial component in ensuring patients' satisfaction.

Keywords: quality measures; satisfaction; loyalty; SEM; patients

1. Introduction

Patient satisfaction may be significantly impacted by the use of quality standards in healthcare settings. Efficacy, safety, promptness, patient-centeredness, and efficiency are just a few of the criteria used in quality assessments, which attempt to consider and recover the delivery of healthcare services. According to quality measures that often put focus on this notion, patients should be involved in making decisions about their treatment, have their preferences and needs addressed, and receive it with respect and compassion. By putting these strategies into practice, healthcare practitioners may foster better patient satisfaction by fostering collaborative decision-making, enhanced communication, and a stronger emphasis on exceeding patients' expectations (Stover et al., 2021). Patient happiness may be significantly impacted by the use of quality control methods in healthcare environments. The quality of patient healthcare services is evaluated and improved using quality metrics. Patient Results that are better the improvement of healthcare interventions' and therapies' efficacy is the main goal of quality measurements. It is possible to improve patient health outcomes by ensuring that they get adequate, evidence-based treatment. Patients are more likely to be happy with their overall treatment when they see improvements in their health (Sanders et al., 2020). Better Patient Safety Patient safety concerns including lowering medical mistakes, minimizing hospital-acquired infections, and improving pharmaceutical safety are often addressed through quality measures. Patients' trust in the healthcare system rises when they get safe, error-free treatment, which raises satisfaction levels (Song et al., 2021). A coordinated

approach to care and effective communication between healthcare practitioners and patients is critical, and quality measurements stress this. Diagnosis, therapy, and medication instructions must all be explained in a manner that is both clear and intelligible. Patients are more possible to be happy through the coordination and statement of their healthcare services when they feel informed and engaged in their treatment (Manzoor et al., 2019). Access to Care Quickly Access to healthcare services promptly is another focus of quality measurements Patient satisfaction is influenced by shorter wait times for visits, diagnostic testing, and operations. Patients are more satisfied when they believe that their demands are being handled quickly and promptly when they obtain timely treatment (Subbe et al., 2019). Customer-Centered Care Patient-centered care, which takes into account each patient's unique requirements, preferences, and values, is often promoted by quality metrics. Patients feel happier and in control of their treatment when clinicians actively include them in decision-making and respect their autonomy (Kanwal et al., 2019). Patient Experience Is Improved Patient experience surveys and evaluations that gauge things like staff attentiveness, facility cleanliness, and general patient satisfaction with treatment are often used as quality metrics. Healthcare companies may find areas for development and put into practice the necessary adjustment to improve patient understanding by gathering and evaluating patient input (Hayek et al., 2019). Implementing quality measures in healthcare settings can improve patient satisfaction by improving patient outcomes, increasing patient safety, promoting effective communication and care coordination, ensuring timely access to care, fostering patient-centered care, and improving the overall patient experience. By concentrating on these areas, healthcare companies may strive toward delivering high-quality treatment that fulfils their patients' needs and expectations (Rising et al., 2019). The efficacy and appropriateness of the medical procedures and therapies that the patient thought they received. Emotional assist the degree of comfort and reassurance offered to patients to allay their worries and concerns and to assist their emotional health (Afrashtehfar et al., 2020). The level of patient involvement and engagement in their care, including shared decision-making and involvement in treatment planning. Healthcare organizations and providers may evaluate and raise the standard of care they give, pinpoint problem areas, and improve the patient experience by measuring patient satisfaction. It is essential to provide patient-centered care and may help with patient retention and improved healthcare results (Zaid et al., 2020).



Figure 1: Determination of Patient Experience

To simplify hospital operations such as patient registration, appointment scheduling, bill generation, disseminating lab test results, organising reminders, etc., adopt a centralised hospital data management system. Concentrate on each patient and provide them with individualised treatment. Contact patients and interact with them in various ways. Attempt to comprehend how patients see the quality of the service provided. Talk to interested parties and use quality control procedures shown in Figure 1.

2. Literature Review

The Shraah et al., (2022) evaluates the elevated levels of satisfaction among patients at a major hospital in Jordan associated with the King Abdullah II Award for Excellence (KAIIE)'s implementation of the customer

outcomes criterion. Receiving feedback from the infirmary as an in-patient from corner to corner on a variety of specialties about various facets of their treatment. The outcomes were contrasted with a self-evaluation of the presence and development of customer result arrangements implemented as a consequence that was performed by various specialty teams. The Mahmoudi et al., (2019) examines the employing new grey relational analysis (GRA) models, to assess the overall link connecting enduring satisfaction and five aspects of healthcare examining quality in Pakistan's municipal and private healthcare sectors. In both the public and commercial healthcare sectors, dependability and responsiveness were shown to be the best predictors of patient satisfaction using grey relational analysis models. The researcher Chan et al., (2019) looked at how administrative and medical quality affected the link between patient satisfaction and participatory leadership. The information was gathered from 123 hospitals in Pakistan's public sector. To evaluate the concrete structure, we used confirmatory factor analysis (CFA) and SEM approaches. According to the examination's findings, there are strong and favorable correlations between customer satisfaction, administration quantity, and participatory behaviour. The Avia et al., (2019) describes a hospital facility's TQM's effects on client fulfilment and perceived service quality. An inpatient who received treatment in April 2018 at a major medical center in Vietnamese was asked to fill out a voluntary assessment. 516 people took the survey. For frequency and descriptive statistical analysis, as well as modeling structural equations, the numerical Package for the Social Sciences version 25.0 and Amos version 25.0 programs were used, respectively. Perceived service quality and patient satisfaction were extensively impacted by whole quality management, and patient satisfaction was positively impacted by perceived service quality. The researcher Ratanjee et al., (2020) determined the impact of severe disease is substantially shaped by the communication between doctors and patients. The need for health systems to frequently develop structures and procedures to ensure high-quality severe illness communication (SIC) is becoming more widely acknowledged. Health systems should also regularly assess the impact of their efforts on important outcomes for different stakeholder groups to promote SIC quality monitoring. Our recommendation of a set of sample metrics for immediate adoption is motivated by the enthusiasm and feeling of significance among health systems to drive and quantify communication improvements. The Gishu et al., (2019) evaluates patient satisfaction with nursing care since it has a direct impact on how happy patients are with the quality of their overall treatment. However, there are little data available on how patients in Ethiopia perceive the caliber of nursing care. Data were gathered sequentially using Safford & Schlotfeldt's Quality of Nursing Care Questionnaires-Patient. The use of consistent random selection resulted in the inclusion of 340 patients, and data were examined. Patients said there was a lack of substantial treatment, education, and home care preparation but that nurse-physician interaction and nursing management were improved. The Febres-Ramos et al., (2020) evaluated Patient satisfaction as a sign of how well medical services are being delivered. Understanding the degree of satisfaction can help fill in gaps and reinforce strengths so that a health system may be developed that offers the high-quality treatment that patients desire. Cross-sectional, descriptive, and observational research. There were 292 patients in the sample. Using the standardised SERVQUAL questionnaire, the health system's service quality was evaluated in terms of patient satisfaction. The health system has to establish ways to enhance care delivery so that patients get timely, high-quality treatment. The Karaca et al., (2019) describes the related issues and evaluate patients' satisfaction with the standard of nursing care. A private hospital's discharged patients made up the sample, which included 635 people. Nineteen items "Patient Satisfaction with Nursing Care Quality Questionnaire" and a socio-demographic questionnaire were used to gather the data. Patients were more content with the "Concern and Caring by Nurses" and less content with the "Information You Were Given." throughout their hospital stay, 64.9 percent of patients thought the nursing handling was exceptional. Patients treated at the surgery and obstetrics-gynecology units between the ages of 18 and 35 who were married and educated beyond high school or college.

3. Conceptual Model and Objectives

3.1. Service Quality

The examination or assessment of the general excellence or quality of a service offered by an organisation is referred to as service quality. The description you provided emphasises how client perceptions and expectations play a part in deciding the quality of service. Customers' expectations of a service are often compared to their actual perceptions of the service to assess the quality of the offered service. Customers' pleasure and their

overall opinion of the quality of the service may be impacted when there is a discrepancy between the anticipated service and the experienced service. According to the definition, customer evaluations of service quality are subjective assessments based on their unique expectations and perceptions rather than being an objective standard. It emphasises how the degree to which actual service delivery matches or surpasses a customer's criteria has an impact on the quality of service.

3.2. Corporate Image

Corporate image is the collective opinion or perception that people have about an organisation. It is a representation of the connections, notions, and ideas that customers and other stakeholders have about the company in their minds. A company's corporate image is shaped through a variety of encounters and experiences with it, including its reputation, goods, services, communication strategies, and behavior. It includes not just how consumers see the company from the outside, but how its workers, shareholders, suppliers, and other stakeholders see it from the inside. Managing corporate image is crucial for businesses because it affects customer loyalty, purchase choices, and general market performance. Businesses often spend money on branding, marketing, public relations, and CSR projects to create a favorable impression in the eyes of stakeholders and customers.

3.3. Patients' Satisfaction

It includes more than simply the evaluation of clinical data. The assessment and impression of the healthcare services that patients get while taking into consideration a variety of characteristics of their experience is known as patient satisfaction. Figure 2 reflects the patient's arbitrary assessment of the value of the treatment they got. furthermore, the researchers argued that it is important to actively work towards meeting patients' expectations rather than just providing for their medical requirements. By doing this, healthcare practitioners, especially those that prioritize the caliber of medical services, may help to boost patient satisfaction. The researchers probably stress that patient expectations go beyond only satisfying the minimum standards of service. It entails making a conscious effort to comprehend and meet the unique requirements and preferences of patients. This may include supplying efficient and scientifically supported therapies, guaranteeing prompt and precise diagnoses, providing thorough and individualized care plans, and ensuring unambiguous communication on available treatments and their potential effects. Healthcare professionals may get better the overall quality of medical services and foster a pleasant patient experience by working hard to satisfy patient expectations. Patient expectations should be fulfilled or surpassed to boost satisfaction, which may therefore improve health outcomes, patient-provider interactions, and patient loyalty.

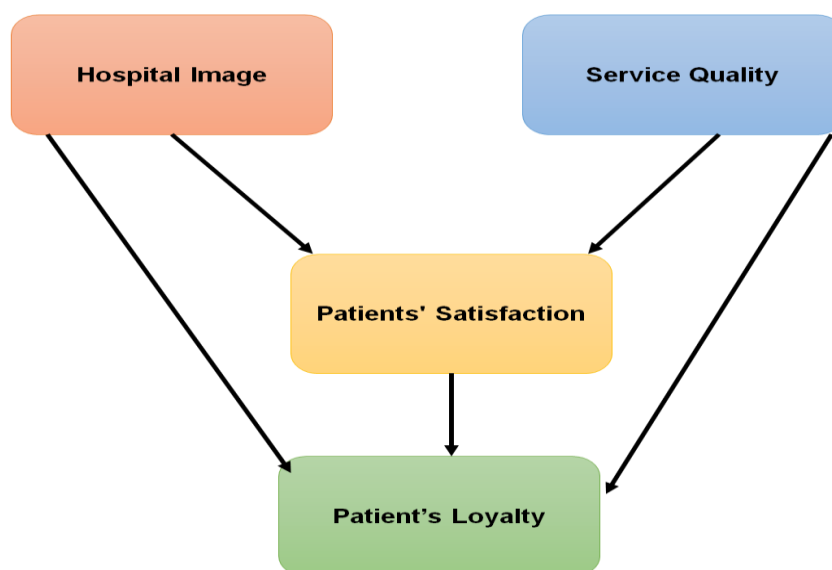


Figure 2: analysis of the conceptual framework

4. Methodology

An instrument on the population of HSNZKT patients in the disaster part was given to the administrative staff as part of the study technique. The questions on the form were modified and handled on the feasibility of the study. To meet the requirements of the study, a few things have been changed. The replies were scored using a 10-point scale, with 1 being a strong disagree and 10 being a strong agree. To achieve the goal of assessing the patients' loyalty and happiness among all HSNZKT patients, the respondents were asked to participate on behalf of the entire residents of HSNZKT patients at the urgent situation division. Using data from pilot research including 100 respondents, an exploratory factor analysis (EFA) was carried out. EFA also assessed each research construct's connected elements and related item consistency. Before the start of SEM, Confirmatory Factor Analysis (CFA) was engaged to evaluate the validity of the capacity model.

4.1 The Reliability and Validity of the Study

The fitness of the measurement models was evaluated using for validity and reliability. When the parameter items' factor loading value was 0.58 or higher for both the EFA and CFA of the suppressed construct, a single dimension was attained. Internal dependability is attained when each construct's Cronbach's Alpha, which consists of all of the variables, is 0.70 or higher. Convergent validity, construct validity, and discriminant validity are three ways to access validity. Convergent validity is attained since all of the measurement model items are statistically significant. Convergent validity and reliability were confirmed by calculating the average variance extracted (AVE) and composite reliability (CR) for each construct. The AVE and CR should be set to 0.50 and 0.60 above, respectively. Discriminant validity is attained when there are no redundant elements in the measurement model. While at the smallest amount, one fitness index from every group reaches its desired level, construct validity is said to have been attained. The major function of CFA is to calculate the extent to which the observed variables accurately reflect the underlying constructs they are intended to measure. The primary goal of CFA is to assess how well the observed variables represent the underlying structures that they are meant to measure. By analysing the convergent validity and discriminant validity of the indicators, CFA enables researchers to evaluate the construct validity of measuring instruments.

5. Results and Discussion

CFA is a statistical method for evaluating the structure or measurement model of a group of observed data. Examining the connections between the variables that are observed and the latent constructs or factors that underlie them is a typical practice in research projects. In CFA, figure 3 associates the observable variables, and the latent constructs are used to quantify or evaluate the variables. The objective is to verify that the latent constructs that the observed variables are meant to assess are truly reflected in them. Researchers may assess the goodness-of-fit between the proposed measurement model and the collected data using CFA.

Table 1: Results of the computation model using CFA

| Construct | Sub-Construct | CR (> 0.6) | AVE (> 0.5) | Item Factor Loading | Cronbach's Alpha |
|--------------------------|---------------|------------|-------------|---------------------|------------------|
| "Hospital Image" | A1 | 0.93 | 0.86 | 0.98 | 0.91 |
| | A2 | | | 0.86 | 0.90 |
| "Service Quality" | B1 | 0.95 | 0.94 | 0.97 | 0.97 |
| | B2 | | | 0.91 | 0.94 |
| "Patients' satisfaction" | C1 | 0.93 | 0.91 | 0.99 | 0.95 |
| | C2 | | | 0.94 | 0.91 |

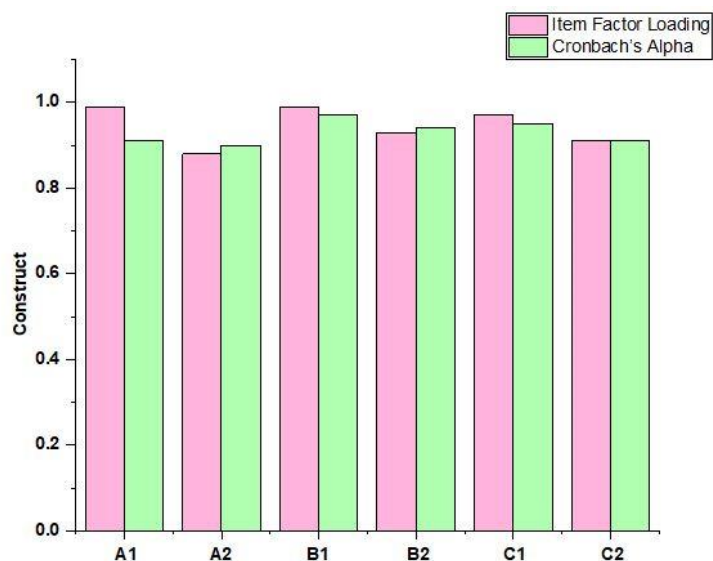


Figure 3: Comparison of Confirmatory Factor Analysis

Table 1 shows that the constructions' CR and AVE have been reached and their values are higher than the recommended values of 0.60 and 0.50, respectively. As a result, this study's convergent validity and reliability were obtained, allowing for further research since the measurement model is accurate and appropriate. The square root of each AVE is shown by the bold diagonal numbers, which indicate all the AVE Hospital Images, Service Quality, Patients' being satisfied, and Patients Loyalty. Since a correlation value was less than 0.98 and the slanting value was higher than the value in their corresponding row and column, the construct's impartiality was improved.

5.1 Structural Equation Modeling (SEM)

SEM is a statistical method for examining the associations between latent constructs and observable variables while taking measurement errors into account. It is a thorough method that combines regression analysis, route analysis, and component analysis to look at intricate correlations between variables. Researchers may evaluate both the structural model and the measurement model using SEM. It is often used in many different disciplines, including the social sciences, psychology, economics, and medical research. The framework was created to evaluate the given hypotheses once the assessment model's validity and reliability were confirmed. Provides a statistical framework to determine if the suggested model accurately depicts the connections between variables. Comparing the observed covariance matrix with the covariance matrix predicted by the model allows researchers to evaluate the model's quality of fit using SEM. SEM makes it easier to test precise hypotheses regarding the correlations between variables by enabling researchers to define and define those hypotheses. If there is a statistically significant association between two variables, researchers may investigate the importance of each route coefficient individually. Testing indirect effects and interactions that mediate between variables is also possible using SEM. The analysis's findings are shown in Figures 4, 5, and 6 along with the route coefficient from each sovereign construct to its equivalent reliant construct, as per the study assumptions. The findings in Table 2 show the path coefficient and its importance.

Table 2: Measurement model

| Item | A1 | A2 | B1 | B2 | C1 | C2 |
|------|------|------|------|------|------|------|
| 1 | 0.81 | 0.83 | 0.74 | 0.87 | 0.80 | 0.85 |
| 2 | 0.82 | 0.86 | 0.68 | 0.87 | 0.83 | 0.88 |

| | | | | | | |
|----|------|------|------|------|------|------|
| 3 | 0.79 | 0.82 | 0.72 | 0.90 | 0.89 | 0.82 |
| 4 | 0.83 | | 0.86 | 0.91 | 0.89 | 0.83 |
| 5 | 0.80 | | 0.86 | 0.84 | 0.86 | 0.79 |
| 6 | 0.87 | | 0.87 | 0.72 | 0.86 | |
| 7 | 0.83 | | 0.88 | 0.67 | | |
| 8 | | | 0.83 | 0.83 | | |
| 9 | | | 0.75 | | | |
| 10 | | | 0.86 | | | |
| 11 | | | 0.82 | | | |
| 12 | | | 0.80 | | | |

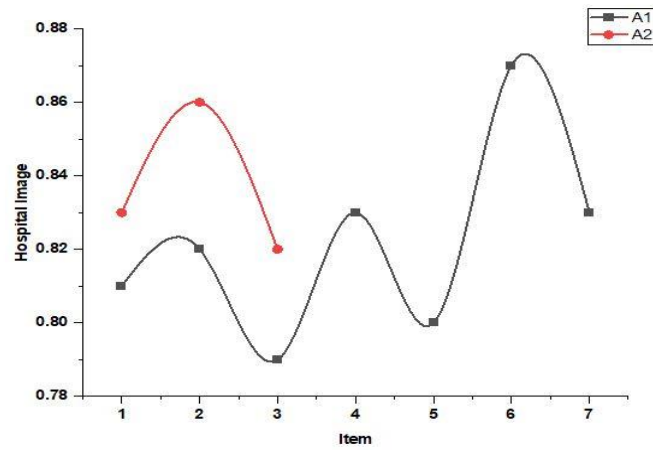


Figure 4: Comparison of Hospital images

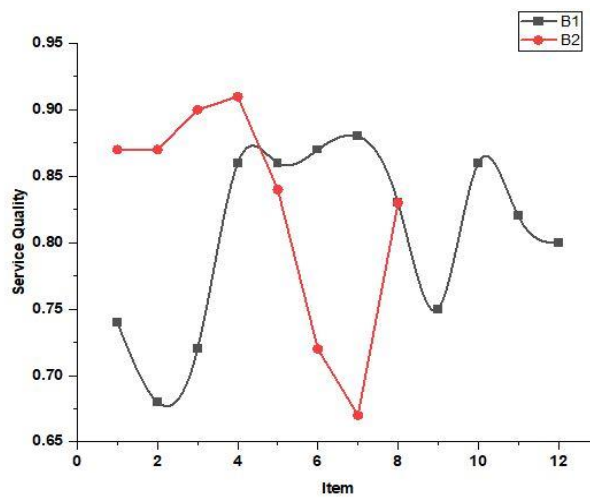


Figure 5: Comparison of Service Quality

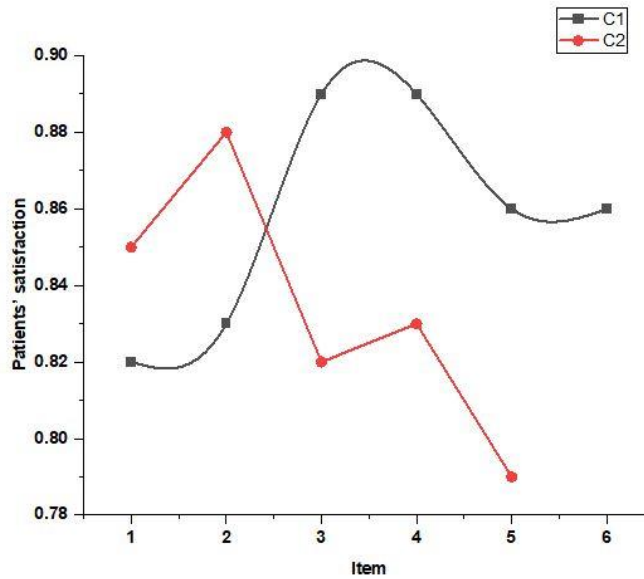


Figure 6: Comparison of patient satisfaction

Five hypotheses were found to be significant by the hypothesis testing findings. H1, which suggested a favorable association between hospital reputation and patient loyalty, was not substantiated by the data ($H1: = 0.094, z = 1.337, \text{significant } 0.181$). The association between patient loyalty and the quality of hospital services, however, has been confirmed ($H2: = 0.25, z = 3.277, \text{significance } 0.001$). The findings also corroborate H3, which stated that patients' loyalty is positively correlated with their level of pleasure. The hypothesis H4 ($H4: = 0.25, z = 3.928, \text{significance } 0.001$) that the hospital's image impacts patients' satisfaction has been validated by the findings. Finally, data showed that H5's assertion that Service Quality positively increases patients' happiness is validated ($H5: = 0.57, z = 8.053, \text{significance } 0.001$).

5.2 Test of Mediation

Examining a variable's ability to act as a mediator involving a sovereign variable and a reliant variable is known as "testing a full mediator." the mediator, the sovereign variable, and the reliant variable. Create hypotheses outlining the anticipated connections between these factors. The independent variable should be implied in the hypothesis as having both direct and indirect effects on the dependent variable via the mediator. Figure 7 depicts the statistical methodology and resources the researcher has access to, the particular analytic methods and software employed may change. The assumptions and constraints of the selected mediation analysis approach must also be taken into account and satisfied for the findings to be properly interpreted.

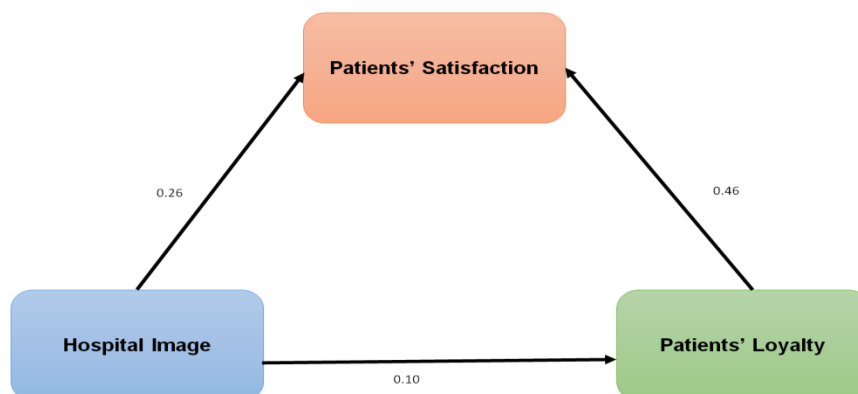


Figure 7: The described process for testing the entire mediator

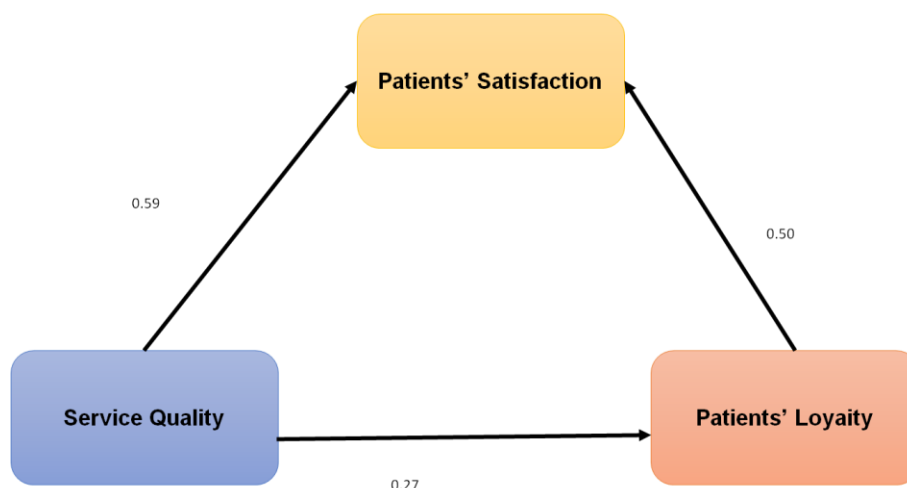


Figure 8: The described process for testing the partial mediator

Figure 8 evaluates the variable's mediating function between a sovereign variable and a reliant variable known as "testing a partial mediator," and it takes place when the mediator only partially explains the link between the two variables. Ascertain the statistical significance of the mediator's indirect impact of the sovereign variable on the reliant variable. The presence of partial mediation is suggested if the indirect impact is considerable. However, if the direct impact is still substantial after the mediator is taken into account, it suggests that both direct and indirect effects are present. Depending on the statistical methodology and resources at the researcher's disposal, several analytic methods and software may be used. The assumptions and restrictions of the selected mediation analysis approach must also be taken into account, and they must be satisfied, for a proper interpretation of the findings.

5.3 Verifying the Mediation's Findings via Bootstrapping

To examine the indirect impact, it is essential to reevaluate the results of the mediation test using the bootstrapping resampling technique. A sample of size n from the current dataset is to be taken by the algorithm as part of the sampling and replacement procedure. This makes it possible to compare the findings of the mediation test with those of the bootstrapping.

5.4 Confirming the Mediation Result through Bootstrapping

Create an envisioned model Create a model based on your research question and theoretical framework that contains the relevant variables, the predicted interactions between them, and the mediator variable. Give details on the direct impacts (path coefficients) of the independent variable on the mediator, the mediator's influence on the dependent variable, and the direct effect of the independent variable on the dependent variable. Data Gathering Utilize the right research techniques, such as questionnaires, interviews, or experiments, to collect data from your study participants. Make sure that your model includes measurements for all the variables that are valid and trustworthy. A statistical resampling method called bootstrapping may be used to verify the mediation result discovered via a mediation study. Bootstrapping enables resampling the data with replacement from the original dataset to estimate the sampling distribution of a statistic. Use a relevant statistical technique, such as regression-based or path analysis-based techniques, to conduct a mediation study. Obtain the point estimates for the direct, indirect, and total effects, along with the corresponding p-values or confidence ranges (for example, regression coefficients). By using bootstrapping, one may examine the indirect impact's significance and acquire more accurate estimates of the indirect effect. This method aids in validating the mediation result and offers a robustness check for any possible breaches of the original analysis's assumptions or sample variability.

6. Conclusion

The study has validated the research's accuracy and dependability. With the technique in both the EFA and CFA, construct validity, convergence validity, and discriminant reliability were established. The Cronbach's alpha value varied from 0.90 to 0.97. The SEM approach is used to establish the validity of nomo logic. According to the hypothesis, the research discovered substantial correlations between patients' contentment and hospital image, patients' satisfaction and service quality, patients' loyalty and patients' satisfaction, and patients' loyalty and service excellence. An important part of the medical process is researching patient satisfaction levels with healthcare treatments. By providing better services or altering how the medical staff interacts with patients, it may be advantageous to know the amount of pleasure that healthcare service customers seem to have in the future. Doctors, nurses, and medical supplies are the key elements that affect how satisfied patients are with their treatment, with cleanliness, furnishings, and equipment that is intended to make them comfortable coming in second and third.

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