

## A Comprehensive Model with Six Service Quality Dimensions, Satisfaction and Loyalty: An Empirical Investigation into the Public Hospitals in Malaysia

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### Abstract

The aim of this study is to identify the factors of loyal patients in public hospitals in Malaysia. The influence of service quality on patient satisfaction and the indirect relationship between service qualities attribute, patient satisfaction and patient loyalty are evaluated. A quantitative research is conducted with close ended questionnaire as an instrument to collect the responses from outpatient centers of public hospital in Malaysia. The results were estimated by using SPSS and Amos 23 to evaluate the relationship between the proposed constructs. The findings highlighted the importance of loyalty in medical care. The factors leading to loyalty are identified and the relationship between satisfaction and loyalty is reconfirmed as prior documented studies.

**Keywords:** Service quality; Patient satisfaction; Patient loyalty; Healthcare and consumer

### Introduction

Loyalty of consumer has always been the top priority in every business sectors. A business becomes accomplished with a data base of loyal consumers. Distinguished experience tops the list of both the providers and consumers, especially in consumer-driven market-retail, banking, hotels, etc. However, healthcare concerns suffice with excellent medical services alone. Singularly, healthcare stands out giving much lower credence to have loyal patients. After all medical care is a type of service where people seek when they need but of course do not want it [1]. There is a firm believe that the primary concern of healthcare divisions is to care for sick people. To put end to this many care givers accept that by giving exceptional quality of care service, loyal patients is obvious to flow in. The era of technology and consumer centric approach, excellent quality of experience enhances loyal customers, perhaps with every service business. Research have supported that consumers now demand for quick and easy accessibility, understanding and convenient communication with the associated provider which includes healthcare supplier as well. Without much apprehension healthcare consumers (patients) can change providers if they do not receive the expected experience, just like other business. There is no doubt that outstanding experiences solely creates loyal patients (consumers) contributing to growth of the provider. Thereby, urgent quest to draw the reticulum of loyalty in healthcare is recognized. The need to conceive that type and scale of the patient loyalty challenge is test of time.

Loyalty is documented through different attributes in prior research endeavors. Regardless, several construct directing to loyal patients in public healthcare centers. This investigation emphasize on weaving the web of patient loyalty with the threads of quality of service and satisfaction from the loom of patients.

### Service quality

Patients at this age are more likely to change doctors or hospitals as restaurants, if they are denied of the quality service experience they depend on, the chances of dumping a doctor is 3% more than ditching an airline due to poor quality of services. However, measuring service quality is not a rare avenue in service business. The rich literary work in this area is the witness of the amount of value it has been given

since history. Regardless of inconsistent findings from continuous and steady investigations, has led to numerous theories and characteristics. Service quality investigation is indispensable without acknowledging the pioneers of service research. Parasuraman's SERVQUAL and Gronroos theories of service quality have been steadily applied across several service firms over time. These measurements have produced mixed results-encompassing the liberty to create and explore new attributes, bringing out the absolute scale of service quality.

Our investigation tested the five dimensions from Mosad research, while contributing service quality of social responsibility as the sixth dimension towards bringing complete satisfaction to patient's experiences in the out-patient centers of public hospitals. The independent dimensions of service qualities are defined as:

**Service quality of object (SQO):** The technical quality (what customer receives) measures the core product or service itself [2].

**Service quality of process (SQP):** The functional quality (how the product or service provider provides the core product or service (the technical). This can be used to pinpoint problems in service delivery and to suggest solutions.

**Service quality of infrastructure (SQINF):** Measures the basic resources which are needed to perform the product or service: the quality of internal competence and skills, experience, know-how, technology, internal relationships, motivation, attitudes, internal resources and activities, and how these activities are managed, cooperated and co-ordinated.

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**Service quality of interaction (SQINT):** Measures the quality of information exchange, financial exchange and social exchange, etc.

**Service quality of atmosphere (SQAT):** The relationship and interaction process between the customer-company are influenced by the quality of the atmosphere in a specific environment where they operate. The atmosphere indicators should be considered very critical and important because of the belief that lack of frankly and friendly atmosphere explains poor quality and less loyalty.

**Service quality of social responsibility (SQSR):** Quality of social responsibility evaluates the providers care and concern for the society.

### Patient satisfaction

Satisfaction is explained as “the consumer’s contentment reaction” [3]. Patient satisfaction is the primary goal of any health system, as this outcomes to better quality of treatment, but it is not simple to measure the satisfaction and understand the critical and sensitive activities within the health systems as not only the clinical but also the non-clinical outcomes of care do influence the customer satisfaction (“Patient Satisfaction as An Indicator of Quality for,”). Density of satisfaction is effectively interpreted only by the person who encounters this experience [4]. Patient satisfaction evaluation reflects the quality of care which can dispense a fair control of the structure, process and result of the services delivered [5,6]. Over the years there is considerable increase in patient satisfaction research and reports. Thus endowing the fact that patient satisfaction concept is a key to upliftment of healthcare services. However, there is lack of stability in the measurement of patient satisfaction. Multitude of dimensions have been tested and evaluated on the pretext of culture, demographic conditions, governance, different hospital settings and likewise. Despite of this one of the important grounds for interest in service quality by managers and researchers follows from the perspective that it has positive effect on consumer satisfaction [7].

### Patient loyalty

There is no specific way of defining loyalty for patients or hospital services. Mostly, the concept of loyalty in healthcare services have been adapted or borrowed from business, marketing or any general service industry. However, recently there is crescent belief and need towards patient loyalty in healthcare. Most of these initiatives have been developed from the recommendation that loyal customers are cost effective to the business, recommending the provider to other people. Prior research has expressed the need to examine services in healthcare with certain specific goals. Therefore, it is not sufficient only to know about the level of services received by the patients. However the knowledge of satisfied or unsatisfied patients should be employed further to future recourse of necessary quality health care services. Additionally, loyalty in healthcare is not only to retain patients but to offer better services in maintaining a healthy life of an individual patient.

According to Dick and Basu [8] loyal consumers not only make repeat purchase but holds positive outlook and feelings about the provider. Therefore, a loyal consumer is the direct result of a satisfied consumer which is by and large the impact of the excellent quality of services encountered [9].

### Research Methodology

Non probability sampling in which convenience sampling technique has been employed to select the targeted sample. The reason

for choosing convenience sampling is because the list of patients, which is the sampling frame for this study, is not obtainable from the hospitals. These informations are highly confidential as such hospitals are not willing to disclose the patient list. The criterion of inclusion in this study is the local outpatients who have utilized the health care services at the public healthcare center in two major hospitals in the state of Selangor. Questionnaires are distributed to adult patients over the age of 18 years in 2016. For determining the sample size for this quantitative study power analysis is used. To conduct power analyses, the values of alpha, power and effect size should be fixed. The conventional value of alpha is set as 0.05 with proposed power value to be 0.08 [10] accepted for a wide range of behavioral research. A structured close ended questionnaire with the scale ranging from 1-strongly disagrees to 5-strongly agree was improvised by adapting prior related research. The targeted sample size to be at least 385 assuming the study has a 100% response rate. In order to get 385 useable responses this study aims to distribute about 500 questionnaire survey in order to get a modest 385 useable responses. A cross-sectional survey method was conducted in this study to collect the raw data, whereby the real data will be collected from the outpatients in the public healthcare centers (sample) only once. Mainly two statistical methods were adopted in this study. Statistical package for social science (SPSS) version 22.0 is applied to key in the data. Further, measurement models and confirmatory factor analysis were performed using Structural equation modeling (SEM) method with AMOS software Version 23.

### Results and Discussion

Out of 394 total useable samples, 187 are male 207 are female respondents. This gives a higher ratio of female participants with 52.5% compared to male with 47.5% responses. The average ages of the respondents are 41-50 age group has 23.4% of respondents, 51-60 ages has 20.8% of respondents and 15.3% participants were in the age group 31-40 years old.

This study aims to find out the influence of Service Quality of object (SQO), Service Quality of process (SQP), Service Quality of infrastructure (SQINF), Service Quality of interaction (SQINTR), Service Quality of atmosphere (SQAT) and Service Quality of social responsibility (SQSR) variables on patient satisfaction and patient loyalty.

### Goodness of fit model suitability test

Since the structural equation model has been modified, it should be done once again the suitability of the model to find out whether the fit model with the existing sample data. Results of AMOS processing can be seen in Figure 1 and goodness of fit test results can be seen in Table 1.

The default values of five measuring devices (probability level (p), CMIN/DF, TLI, CFI and RMSEA) all show a fairly high number, indicating that the model is fit with existing data. It can thus be stated that this test results in good validation of the factors dimensions and causalities relationships between factors.

The result of data analysis shows that the SQAT variable has significant relationship on patient loyalty. The correlation value between the SQAT and patient loyalty variables is 0.216 whereas the probability of SQAT is as small as 0.000 which means that the SQAT variable has a significant direct association on patient's loyalty. This is consistent with prior studies by Authors, James and Bugembe [11,12] where service quality of atmosphere had positive relationship with patient loyalty.

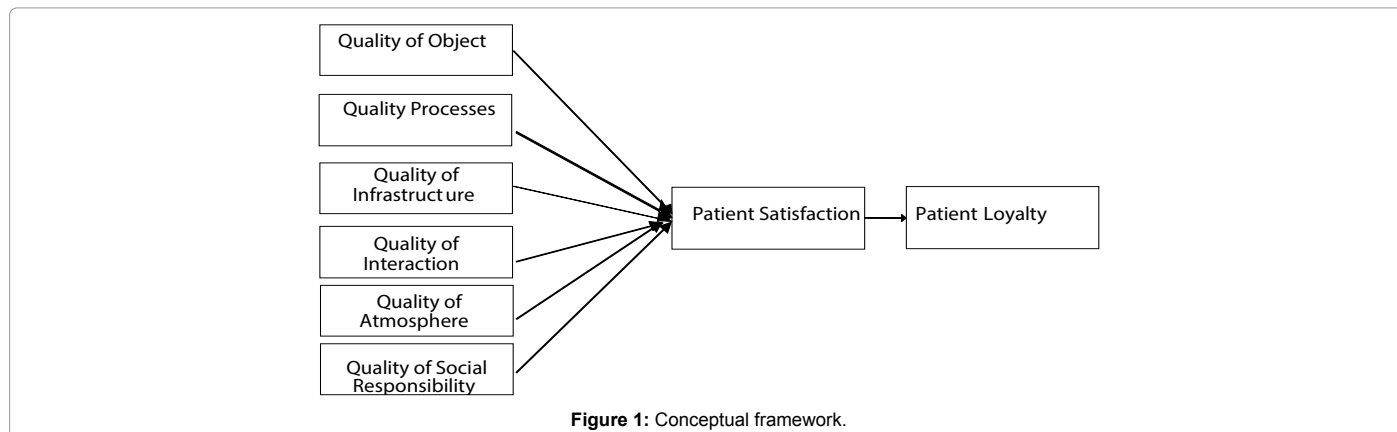


Figure 1: Conceptual framework.

Model	Default Model	Cut off Value	Details
Chi-square (CMIN)	3237.604		Based on the test of significance is expected to be small
Probability Level (p)	0.000	<0.05	Good
CMIN/DF	3.401	≤5.00	Good
TLI	0.852	≥0.80	Good
CFI	0.854	≥0.80	Good
RMSEA	0.065	≤0.08	Good

Table 1: Goodness of fit modification test result.

The service quality of atmosphere shows direct influence on the patient's loyalty as good environmental atmosphere contributing to the best service quality and the patient's feel that quality of atmosphere experienced in a hospital has a significant difference. The suitability of the ambient environment with the quality of hospital services causes patients to have the desire to stay with the services offered by hospitals previously visited. The result of data analysis for SQSR variables has effect on patient satisfaction. The result of the data analysis obtained a correlation value of 0.068 and the probability of 0.043 is smaller than 0.05. This means that the SQINTR variable measured through four items is an ethical statement affecting the patient's satisfaction. These results are in line with previous research results, where SQINTR has an influence on patient satisfaction. Research by Morgan and Hunt [13] found that the SQINTR variable has a positive relationship to patient satisfaction. These results support the suggestion that the level of consent given by four statements is related to patient satisfaction because the parameters among the four constructs are significant to clarify the quality of interaction in contributing to the level of patient satisfaction agreement. The findings from analysis prove that SQSR variables have influence on patient satisfaction. The correlation between SQSR variables and satisfaction is 0.750 with the probability value of patient satisfaction as small as 0.000 which explains that SQSR variables have a positive and significant influence on patient satisfaction. This result also supports the research conducted by Luo and Bhattacharya [14] which states that SQSR perception has a positive and significant influence on patient satisfaction. SQSR in this study is also a fundamental thing and is very important in structuring the patient satisfaction. The result of data analysis shows that patient satisfaction has influence on patient loyalty. The correlation between patient satisfaction and patient loyalty is 0.719 while the probability of patient satisfaction is as small as 0.000 which less than 0.05 to explain patient satisfaction has a significant effect on patient's loyalty. The results of this study were consistent with the empirical studies conducted by Martín-Consuegra et al. [15],

where in their study it states that patient satisfaction has a significant effect on patient's loyalty. The result of this study is also consistent with empirical studies conducted by Virvilaite et al. [16] found that patient satisfaction has a significant effect on patient's loyalty. Virvilaite et al. states that satisfaction is the most important factor affecting patient's loyalty. It can be concluded that satisfaction analyses in the context of marketing relationships. Scientists have stated that in the long term relationships patients is not only expecting a good quality of service offered but also an added value in maintaining a relationship. Patient satisfaction in this study has a significant effect on patient's loyalty. The patient's satisfaction arising from patient perceptions of the services offered creates the patient's desire to reoccurrence to service. Patients who are satisfied usually have resistance to negative effects on the services provided. Although hospital services are underdeveloped or inadequate, the patient will continue to enjoy the same hospital services.

## Conclusion

The primary objective of this study is to highlight the dimensions of service quality of patient's satisfaction emerging towards loyal patients to public hospitals. The findings revealed that the six service quality dimension: object, process, infrastructure, interaction, atmosphere and social responsibility influences patient satisfaction and loyalty factors. This study justifies the role of patient satisfaction as an intermediating construct of service quality attributes towards patient satisfaction. The service quality of object fails to fit within satisfaction to produce loyal patients. Giving path to speculate patients limitation of judging the core professional service of medical care. Despite having high level of personal and confidential interaction with the medical professionals, patient might have frustration in correctly understanding the treatment activities. Thus the results are in line with numerous earlier studies, where they have concluded that patients have minimum ability to assess medical service quality and hence can be expected to choose hospitals based on some tangible features such as physical equipment's and facilities Li et al. [17]. The service qualities of infrastructure, interaction, atmosphere and social responsibility, thus effect patient's loyalty feelings through their satisfaction from the quality of medical services offered. Thus findings of this research stands by the concept that patients will be satisfied with medical care, effective management of processes, up dated technical facilities, concern for patient contribution, answerability to social problems with support from the health care takers by giving a helpful atmosphere to patients in every visit for all treatments will instill the loyal qualities in patients.

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