The influence of hospital image and service quality on patients' satisfaction and loyalty

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CHRONICLE	ABSTRACT
	The increasing numbers of public and private hospitals have resulted in the competitive environment in healthcare industry. This situation needs cooperation and support from the hospitals to focus on setting up compelling hospital image and providing satisfaction to the patients to ensure and secure their loyalty. Therefore, providing a high Service Quality will ensure the patients' satisfaction and loyalty to keep on tapping the service provided. This study reports on a research finding that undertakes to analyze the effect of Image and Service Quality provided by the hospital towards patients' satisfaction and loyalty in public hospital in Terengganu. Structural Equation Modelling (SEM) was used to test the proposed hypothesis model in the study. The finding of this study illustrates that although hospital image did not have any effect on the patients' loyalty, but it had a big impact on patients' satisfaction. Furthermore, patients' satisfaction had a big impact towards patients' loyalty. This study also clarifies that the Service Quality provided by the hospital had a direct influence on the patients' satisfaction and loyalty. Hence, a high service quality provided by the hospital will influence patients' satisfaction and loyalty and a positive and compelling hospital image is an important factor to ensure the patients' satisfaction.

1. Introduction

Globalisation has brought up a competitive competition in all sectors. Accomplishment gain in the competition is determined by probability and effective feedback towards every prerequisite variation of customers' behaviours. Organisation is obliged to be more creative and innovative in engaging customer by endorsing product through providing the best necessity and service (Aryani & Rosinta, 2010; Pariyo et al., 2009). The revolution of quality is a phenomenon which has big impact towards management system in an organisation. A good service quality can be described as a part of the organisation to be successful in this industry (Ramli et al., 2009). Besides, service sector is one of the sectors which drive the economy development. Service-based sector has become the primary key to support the organisations in various fields such as banking, healthcare, hospitality, telecommunication and others (Boon & Nasir, 2011). According to Pariyo et al. (2009), the service quality offered to the customer indicates the level of knowledge, ability and willingness of the employee to serve them. The effectiveness of the service quality

is determined by customers' satisfaction which will meet the desired requirement from the parties involved to ensure the service quality is correspondence with the rapid development. In confronting the competition with other countries, the effort to intensify the service quality and image of an organisation must always be in appropriate state and progress accordingly and timely. On the word of Johnson et al. (2001), the service quality served has become a priority to an organisation, thus an effective service quality can be termed as a service which is able to satisfy patient's expectation (Boon & Nasir, 2011). Therefore, it is important for a hospital to always evaluate the patient's needs and anticipations (Gelis et al., 2017) to ensure the patients' satisfaction towards hospital (Kui-Son et al. 2005) and behavioural intention of patient (Amin & Nasharuddin, 2013).

2. Problem Statement

In today's sophisticated and rapidly revolutionised world, healthcare organisation such as clinic and hospital is one of the fields in the service-based sector which provide healthcare service and become the attention and focus of community. With the growing demand on the healthcare service, issues such as customers' satisfaction and loyalty have become a significant topic for the management team and customer. According to Al-Borie and Sheikh Damanhourie (2013), the most vital problematic and arising issue towards several previous researches was concerned with the hospital's service from the patient's point of view but, Hensen et al. (2008) debate on the hospital's service evaluation from the point of view of health officer. Nekoei-Moghadam and Amireshali (2011), Johan et al. (2014) and Ovretveit (2014) studied on the quality of healthcare service at emerging countries and recommended a solution for healthcare problem by increasing the quantity and quality of the health expert and resource (doctor, nurse, and other healthcare-related employee) through providing trainings and health department should monitor all employees' activities. As stated by Meirovich et al. (2011) suggested that the hospital management department must be able to manage and build-up the hospital's performance and the service quality provided to the patient. The outcome of this study indicated that the higher the level of hospital's service quality, the higher the level of satisfaction and behavioural acquired by the patient. Furthermore, a study accomplished by Wang and Shieh (2006) explained that the dimension of trustworthiness could positively affect the hospital's service. Therefore, in conjunction to achieve a competitive and driven quality, it can be attained by escalating the quality provided by the service-provider. Feedback, suggestion and consideration obtained from the patients' satisfaction is a significant element in the hospital management system all around the world and also as an important requirement towards the healthcare supplier. The effort led by the government in the healthcare service sector is currently seen as ineffective and unable to achieve the satisfactory level if compared with the patient's desire and anticipation. Additionally, Azadeh et al. (2013) found a total of 233 complaint cases from the patients received by the hospital through several ways which consist of 46.35% verbal complaints, 31.34% written complaints and 22.31% telephone (indirect) complaints. For the customer loyalty evaluation, it becomes an essential mechanism which needs to be given a full attention and concerned. According to Oliver (1999), customer loyalty has become the primary focus key during the discussion in the marketplace. Part of the organisation priorities customer loyalty since adequate profit margin level is gained from loyal customer. Babin et al. (2005) insists that customer loyalty is an important issue and must be protected because a loyal customer is the important asset to the organisation.

3. Literature Review

3.1. Service Quality

Service Quality is defined as "a function of the difference between service expected and customer's perceptions of the actual service delivered" (Goel & Yang, 2015; Ramli & Fun, 2009) and it has received intense research attention in services marketing. Among others, delivering high Service Quality is considered an essential strategy for success and survival in this competitive environment (Andronikidis et al., 2009). According to Nitecki & Hernon (2000), Service Quality, in terms of meeting or surpassing

customer expectations, is the difference between customer perceptions and expectations of service. In the case of healthcare services, perception is defined as the process by which the consumer receives, selects, organizes and interprets the stimuli to which it is exposed in a manner consistent with its own frame of reference - attitudes, values, motivations and previous experiences (Andreea, 2016; Al-Mhasnah et al., 2018). The perception of quality of healthcare service based on three dimensions which is the physical environment (which includes the state of the environment, the social factor and the tangible elements), qualitative interaction (including attitudes and behaviour, diagnosis and quality of the medical process), and quality of the results (including waiting times, patient satisfaction and loyalty; Chahal & Kumari, 2010; Awang et al., 2015).

3.2. Corporate Image

According to Aydin and Ozer (2005), corporate image is well defined as the overall impression made on the minds of the public about a firm. Corporate image can be defined as perceptions of an organisation reflected in the associations held in consumer's memory. A planned and well managed corporate image is the most promising marketing strategy in order to attract current consumers (Ghazali et al., 2017). Nguyen and Leblanc (2001) and Afthanorhan et al. (2017) found that corporate image is related to the physical and behavioural attributes of the firm such as business name, architecture, services and to the impression of quality communicated by each person interacting with the firm's clients. They also defined that corporate image is associated with positively with customer loyalty in three sectors which is tele-communication, retailing and education. Johnson et al. (2001) stated that corporate image as an attitude that will affect behavioural intentions such as customer loyalty.

3.3. Patients' Satisfaction

Patient satisfaction can be defined as "the result of judgment made by the healthcare consumers after analysing the medical outcome of the process in order to see if their expectations have been accomplished or not" and satisfaction was defined as "the consumers` feelings based on the experiences gained after consumption" (Andrea et al., 2007). A study performed by Andaleeb et al. (2007) about patient satisfaction with health services in Bangladesh found that measuring Service Quality and satisfaction is very important. On a similar noted, Aldana et al. (2001) studied about client satisfaction and quality of health care in rural Bangladesh. They found that almost more than 80% of the 125 million population of Bangladesh lived in the countryside, the main objective of the present study is to assess in detail the expectations of quality of care and the level of satisfaction of patients attending rural government health facilities.

A better understanding of the determinants of client satisfaction should help policy and decision makers implement programmes tailored to patients' needs as perceived by patients and service providers. Besides, Boscariano (1996) studied the biases that associated with assessing quality care based on patients' perception. In this study, patients have become more involved in hospital choice, while many patients do not choose a hospital directly, findings suggest that they often do this indirectly through choice of a personal physician. Patients' satisfaction with hospital treatment positively influences the image of the medical facility (Szyca et al., 2012; Afthanorhan et al., 2018). They found that many factors are involved which are the assessment of the quality of the medical service associated with the rapid solution of the reported problem, staff empathy and attitude, as well as the understanding and precise information. Besides, they suggested the need to satisfy the health needs of patients by the medical facilities but also strived to meet these expectations which lead to increased satisfaction considering the quality of medical services.

3.4. Patients' loyalty

According to Gelis et al. (2017), customer loyalty was a concept in business literature approached as patient loyalty or commitment in health services. Generally, loyal patient or consumer means a person

who regularly uses a service provider or vendor, repeats to purchase of service or product from the same corporate and does not consider other service providers or vendors (Gelis et al., 2017). Patient loyalty, which is very important for healthcare providers, can be described as "the situation that the patient continue the relation with the hospital and recommend the services of the hospital to the potential patients" (Engiz, 2007). The satisfaction of the patient with the service taken is important in terms of loyalty and positive perception of the hospital (Chi & Gursoy, 2009). It is not possible unsatisfied customer becomes loyal customer while satisfied customer is always a loyal customer (Chang et al., 2013; Afthanorhan et al., 2018).

4. Conceptual Framework of the Study

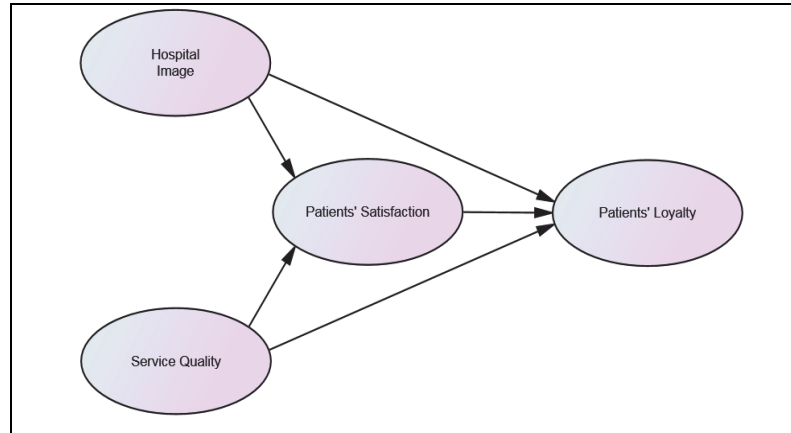The variables under investigation in this study are shown in the following diagram.

Fig. 1. Proposed framework

5. Research Methodology

The research methodology involved the administration staff with questionnaire on the population of HSNZKT patients at emergency unit. The items included in the questionnaire were adapted and processed according to the suitability of the research from (Awang, 2007; Awang et al., 2006; Aziz, Afthanorhan, & Awang 2016). Several items have been modified in order to suit the needs of the research. The 10 point scale ranging from 1 (strongly disagree) to 10 (strongly agree) with the statement were used to measures the responses. The respondents were involved for the whole population of HSNZKT patients at emergency unit to meet the objective in determining the patients' satisfaction and patients' loyalty of all HSNZKT patients. To test the hypothesis, Structural Equation Modelling (SEM) was used through AMOS Software 21.0. A pilot study was conducted known as Exploratory Factor Analysis (EFA) through pilot study data of 100 respondents. EFA also determined the consistency of all items and the related components of each construct of the study. To determine the validity of the measurement model, Confirmatory Factor Analysis (CFA) was used before the commencement of SEM.

5.1. Reliability and Validity of the Study

In this study, reliability and validity were used to ascertain the fitness of the measurement models. Unidimensionality has been achieved when factor loading value of the measuring items was 0.60 and above for both EFA and CFA of latent construct (Aimran et al., 2017a; Afthanorhan et al., 2019). When the Cronbach's Alpha of each construct that comprises of every variable are 0.70 and above, then the internal reliability is achieved. Validity is accessed using convergent validity, construct validity, and discriminant validity (Awang et al. 2015). Since all items in the measurement models are statistically significant, then

the convergent validity is achieved. By computing average variance extracted (AVE) and composite reliability (CR) and for each construct, the convergent validity and reliability was verified. The recommended value of the AVE and CR are 0.50 and 0.60 above respectively (Aimran et al., 2017b). When the measurement model is free from redundant items, then discriminant validity is achieved. Construct validity is achieved when, at least, one fitness index from each category achieved its regarded level (Awang, 2015).

5.2. Results of Factor Analysis

Measurement Model – The measurement model, comprises the factor loading of each item with R^2. Fig. 2 shows the fitness indexes of the measurement model of this study.
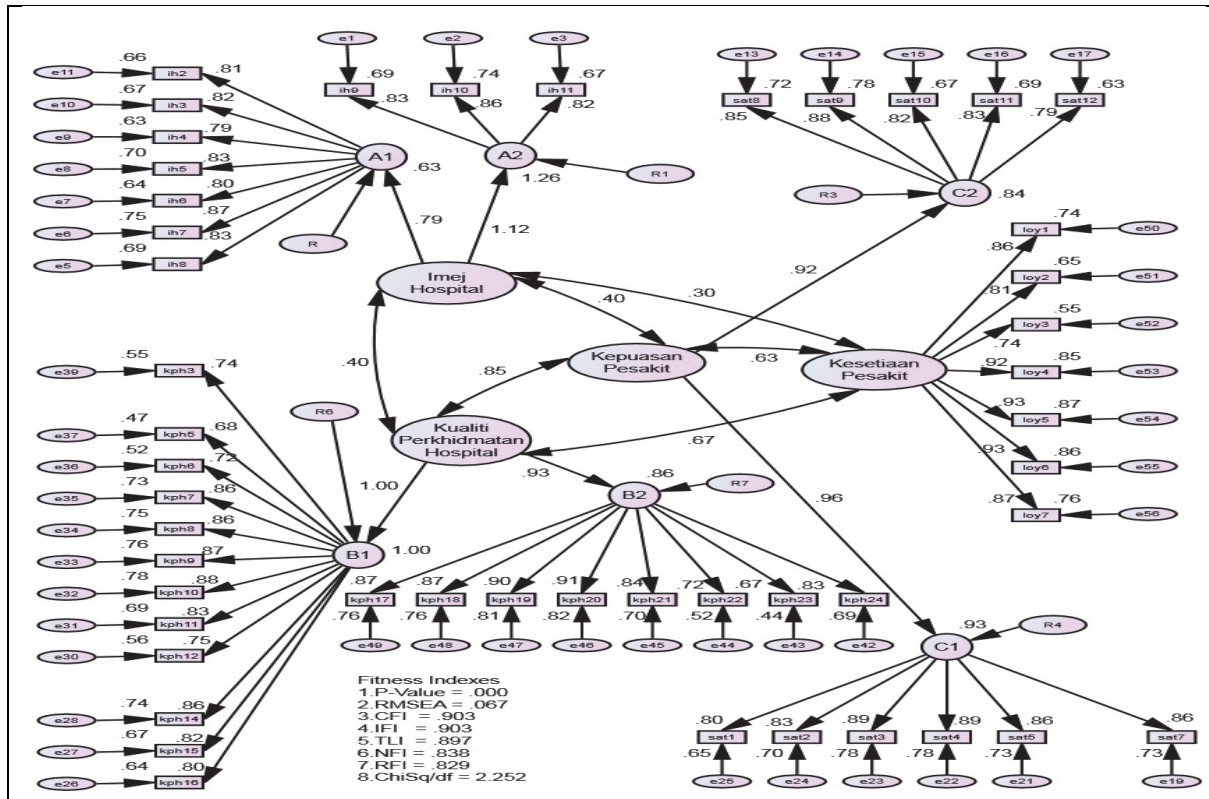

Fig. 2. The Pooled CFA Results and the Output Showed All Fitness Indexes Achieve

Table 1
Regression Weights

			Estimate	S.E.	C.R.	P-Value	Result
Patients' Satisfaction	←	Hospital Image	.232	.059	3.928	.001	Significant
Patients' Satisfaction	←	Services Quality	.536	.067	8.053	.001	Significant
Patients' loyalty	←	Patients' Satisfaction	.571	.098	5.850	.001	Significant
Patients' loyalty	←	Services Quality	.272	.083	3.277	.001	Significant
Patients' loyalty	←	Hospital Image	.094	.070	1.337	.181	Not Significant

Table 2
Achieved Fitness Indexes of the study

Category Name	Index Name	Index Value	Comment
Absolute fit	RMSEA	0.067	Fitness Level Achieved
Incremental fit	CFI	0.903	Fitness Level Achieved
Parsimonious fit	ChiSq/df	2.252	Fitness Level Achieved

Table 2 shows the fitness Indexes of the measurement model. All fitness Indexes (RMSEA = 0.067), CFI = 0.903, and ChiSq/df = 2.252) of the measurement model signify a satisfactory fit to the data and the results of all indexes were good. Hence, this study achieved the construct validity.

Table 3
CFA Results for the Measurement Model

Construct	Sub-Construct	Item Factor Loading	CR (> 0.6)	AVE (> 0.5)	Cronbach's Alpha
Hospital Image	A1	0.99	0.934	0.877	0.917
	A2	0.88			0.909
Service Quality	B1	0.99	0.960	0.923	0.977
	B2	0.93			0.949
Patients' satisfaction	C1	0.97			0.955
	C2	0.91	0.939	0.885	0.910

Table 3 displays that CR and AVE of the constructs have been achieved, and their values are above the endorsed value 0.60 and 0.50, respectively. Hence, this study achieved the convergent validity and reliability and can proceed for further analysis as the measurement model is valid and fit. Hence, Table 4 depicted the discriminant validity index summary for a piece latent construct included in this study. The bold diagonal values represent the square-root of the respective AVE and explicitly mean the AVE for Hospital Image, AVE for Service Quality, AVE for Patients' Satisfaction and AVE for Patients' loyalty. The discriminant validity of the construct was gained as the correlation value not exceeded 0.96 and the diagonal values were greater than the values in their rows and columns respectively.

Table 4
Discriminant Validity Index Summary

Construct	IH	KPH	SAT	LOY
IH	**0.94**			
KPH	0.40	**0.96**		
SAT	0.40	0.85	**0.94**	
LOY	0.30	0.67	0.63	*0.94*

5.3 Structural Equation Modelling (SEM)

Once the validity and reliability of the measurement model was achieved, the structural model was established to test the proposed hypotheses. The study used the parametric SEM in SPSS-AMOS 21.0. Fig. 3 presents the results from the analysis showing the path coefficient from and independent construct to its corresponding dependent construct, as stated in the research hypotheses. The results in Table 5 indicate path coefficient together with its significance.

Table 5
Measurement model

Item	A1	A2	B1	B2	C1	C2	D
1	0.81	0.83	0.74	0.87	0.80	0.85	0.86
2	0.82	0.86	0.68	0.87	0.83	0.88	0.81
3	0.79	0.82	0.72	0.90	0.89	0.82	0.74
4	0.83		0.86	0.91	0.89	0.83	0.92
5	0.80		0.86	0.84	0.86	0.79	0.93
6	0.87		0.87	0.72	0.86		0.93
7	0.83		0.88	0.67			0.87
8			0.83	0.83			
9			0.75				
10			0.86				
11			0.82				
12			0.80				
AVE	0.675	0.654	0.700	0.654	0.689	0.731	0.955
CR	0.936	0.957	0.875	0.957	0.946	0.931	0.754

The hypothesis testing results in Table 5 revealed the significance of five hypotheses. H_1 which conveyed a positive relationship between hospital image and patients' loyalty was not empirically supported (H_1: $\beta = 0.094$, $z = 1.337$, significance < 0.181). On the other hand, the relationship between quality of hospital service and patients' loyalty has been supported (H_2: $\beta = 0.25$, $z = 3.277$, significance < 0.001). H_3 conveyed that patients' satisfaction positively relates to patients' loyalty has also been supported by the results (H_3: $\beta = 0.48$, $z = 5.850$, significance < 0.001). H_4 conveyed that hospital image positively influences patients' satisfaction has been supported by results (H_4: $\beta = 0.25$, $z = 3.928$, significance < 0.001). Finally, H_5 conveyed that Service Quality positively influences patients' satisfaction has also been supported by results (H_5: $\beta = 0.57$, $z = 8.053$, significance < 0.001).
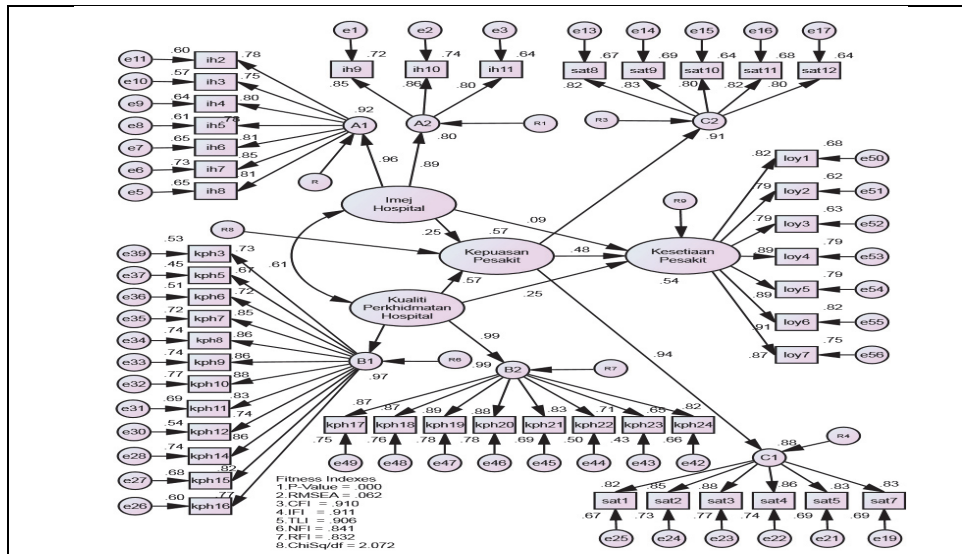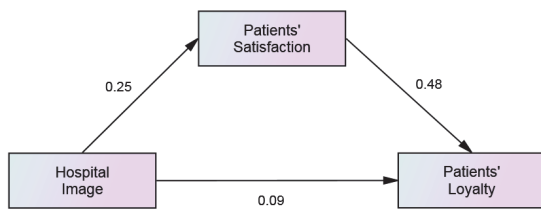

Fig. 3. AMOS Output of Model Test Which Shows the influence of Hospital Image *(Imej Hospital)* and Service Quality *(Kualiti Perkhidmatan Hospital)* on Patient Satisfaction *(Kepuasan Pesakit)* and Loyalty *(Kesetiaan Pesakit)*.

6. Test of Mediation

The Indirect Effect = (0.25).(0.48) = 0.12
The Direct Effect = 0.09
Since Indirect Effect > Direct Effect as well as both Indirect path (Hospital Image to Patients' Loyalty) are not significant, full mediation occurs.
Type of mediation is **Full Mediation** since the direct effect for Hospital Image to Patients' Loyalty is not significant.

Fig. 4. The procedure for testing mediator as outlined by Awang (2015)

The Indirect Effect = (0.57).(0.48) = 0.27
The Direct Effect = 0.26
The Indirect Effect > The Direct Effect, as well as both Indirect path (Service Quality to Patients' Loyalty) are significant, partial mediation occurs.
Type of mediation is **Partial Mediation** since the direct effect for Service Quality to Patients' Loyalty is significant

Fig. 5. The procedure for testing mediator as outlined by Awang (2015)

6.1. Confirming the Mediation Result through Bootstrapping

It is imperative to reconfirm the result of the mediation test using the re-sampling procedure of bootstrapping for the purpose of testing the indirect effect. The process allows for sampling and replacement, where the algorithm is instructed to take the sample of size *n* from existing dataset. This, therefore, enables comparison of the mediation test results with the bootstrapping results.

6.2 Bootstrapping Result for Mediating Variable

Table 6
The results of bootstrapping procedure in testing the mediator customer satisfaction

	Indirect Effect	Direct Effect
Bootstrapping Result	0.121	0.086
Bootstrapping P-Value	0.001	0.208
Result	Significant	Not significant
Type of Mediation	Full Mediation since direct effect is not significant.	

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Table 7
The results of bootstrapping procedure in testing the mediator customer satisfaction

	Indirect Effect	Direct Effect
Bootstrapping Result	0.275	0.245
Bootstrapping P-Value	0.001	0.05
Result	Significant	Significant
Type of Mediation	Partial Mediation since direct is also significant.	

Here, the study used bootstrapping procedure to confirm the indirect effect and direct effect between the constructs as recommended by Afthanorhan et al. (2017, 2018, 2018) and Bakar et al. (2008). Table 6 shows the beta estimate of both the indirect effect and the direct effects of Hospital Image and Patients' Satisfaction (β) = 0.121 and 0.086 respectively. Furthermore, it shows the P-Value of indirect and direct effects for the Hospital Image and Patients' Satisfaction (P-Value = 0.001 and 0.208 respectively). Based on the bootstrapping results of Table 6, it is evident that Hospital Image is full mediator for the relationship between Hospital Image on Patients' Satisfaction. Consequently, the H_4, of this study which posited that Hospital Image mediated the relationship between Hospital Image and Patients' Satisfaction. Table 7 shows the beta estimate of both the indirect effect and direct effects of Service Quality and Patients' loyalty (β) = 0.275 and 0.245 respectively. It shows the P-Value of indirect and direct effects for the Service Quality and Patients' Satisfaction (P-Value = 0.001 and 0.05 respectively). Based on the bootstrapping results of Table 6, it is evident that Service Quality was partial mediator for the relationship between Service Quality on Patients' Satisfaction.

7. Conclusion

The study has confirmed the validity and reliability of the research. Construct Validity, Convergent Validity and Discriminant Validity were confirmed with the procedure in both EFA and CFA. The Cronbach's α value ranged from 0.909 to 0.977. Nomo logical validity was confirmed using Structural Equation Modelling (SEM) procedure. As posited, the study found significant relationships between Patients' Satisfaction and Hospital Image, Patients' Satisfaction and Service Quality, Patients' loyalty and Patients' Satisfaction, and Patients' loyalty and Service Quality. Studying the satisfaction level of the healthcare services customers is an essential factor of the medical process. Knowing the level of the satisfaction apparent by the healthcare services consumers can be an advantage in the future by making more appropriate services or changing the way that the medical personnel communicates with the patients. The main factors that influence the satisfaction level are: doctors, nurses, medical equipment influence mostly the satisfaction perceived by the healthcare services consumers, followed by the level of cleanliness, the furniture and the equipment designed for the patient's comfort.

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