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## **A comparative study on the relationship between service quality and patient loyalty in private and public hospitals (with special reference to Colombo district)**

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### **Abstract**

The Healthcare system is one of the major service sectors which contributes to the stability of any nation. Better quality of healthcare services may have a positive effect on patient loyalty and it will lead to the betterment of the healthcare organizations. The study is therefore mainly focused on identifying the relationship between service quality and patient loyalty of public and private hospitals in Colombo district. In this research, the service quality model (SERVQUAL) which was introduced by Parasuraman *et al.* (1988) [38] has been used for evaluation of service quality while the measurements of Zeithaml *et al.*, (1996) [47] has been used for evaluation of satisfaction and loyalty. The required information was obtained through a structured questioner and the sample size was 400. The sampling technique was multi-stage cluster sampling. The descriptive analysis, hypothesis testing, principal component analysis and Structural Equation Modeling (SEM) were used to derive the required inferences. The results of this research show that service quality affects patient satisfaction, and patient satisfaction effects on patient loyalty in the contexts of both public and private hospitals while a significant effect of service quality on patient loyalty was recorded only in the private sector. Furthermore, it presents that private hospitals form a partial mediating effect and the public hospitals form a full mediating effect by patient satisfaction for the relationship between service quality and patient loyalty. These results can be used by hospital authorities to implement effective strategies to ensure the superior quality of healthcare services and enhance patient satisfaction and loyalty.

**Keywords:** Patient Loyalty, Patient Satisfaction, Public & Private Hospitals, Service Quality

### **1. Introduction**

#### **1.1. Background of the study**

World Health Organization defines health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. According to them, enjoying the highest level of health is one of the basic rights of all people without distinction of race, religion, political perception, economic or social status. Moreover, all human health is essential to achieve peace and security and depends on the full support of the population and the states. Therefore, the achievements of the state in strengthening and protecting health is valuable to all. Today, the health system of all countries whether it's rich or poor plays an increasingly important and influential role in the lives of all people. The health system has undergone reforms from generation to generation over the past century, including the creation of the national healthcare systems and the expansion of the social insurance schemes. Subsequently, the promotion of primary health care has become a way to achieve universal coverage with the goal of health for all. The healthcare industry consists of businesses that involve in providing medical services and products, medical insurance, and other health facilities to ensure patients' wellbeing, where hospitals in a country play a major role in providing health care to its people.

In Sri Lanka, services are the biggest sector of the economy and percentage share is more than 50 percent of total GDP (Central Bank of Sri Lanka, 2019) [11]. Within the service sector, the healthcare system is one of the major segments which contributes to the country's stability. Sri Lanka has an inclusive healthcare system that provides free health care to all its people. Both private and public hospitals are situated in major towns and cities with essential

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facilities such as OPD, laboratory, and radiology facilities in common, and hospitals that use high technological instruments are also available. A large number of private hospitals have been appeared due to the higher demand of the people and it is considered that private hospitals provide much more luxurious service than government hospitals. But in case of emergencies, it is recommended to visit general hospitals as they have superior knowledge, experience, and facilities to handle those emergencies.

Patients demand high-quality services in the healthcare service industry. The service provided by the hospital affects the patient and also the goodwill of the hospital. In developing countries, both public and private sector's hospitals are responsible to provide healthcare services to the country and there's a difference between these two sectors concerning their operation, efficiency, structure, work culture, and background (Shrivastava and Purang, 2011 as cited by Shabbir *et al.*, 2016) <sup>[41]</sup>. Studies emphasize that better quality of healthcare services has a positive effect on patients' satisfaction which ultimately lead to building loyalty among patients (Fatima *et al.*, 2018; Shabbir *et al.*, 2016) <sup>[17, 41]</sup>, where patient satisfaction attains when the perceived service quality matches or exceed the patient's expectations, and patient loyalty refers to the frequent utilization of service when the patient has a positive attitude toward the service or hospital providing the service (Fatima *et al.*, 2018) <sup>[17]</sup>. The weight of studies on service quality, customer satisfaction, and customer loyalty in different industries is increasing due to their importance to the modern world. Hence, examine the existing theories and findings of earlier academic work done on service quality, customer satisfaction and loyalty in various contexts is important.

## 1.2. Service Quality

The attention on the service quality was improved in the current society as it is increasingly being defined as the most important factor for the creation of competitive advantage. Service quality has become a major area of attention to different service industries i.e. hospitality industry such as hotels, restaurants, and pubs, in travel and transportation industry, education institutions and companies, banks, in the retailing environment, insurance and even in some professional services such as lawyers, accountants, etc., because of its strong impact on business performance, lower costs, customer satisfaction, customer loyalty, and profitability. Also, service quality is defined as consumers' judgment about the overall excellence or superiority of a service (Zeithaml, 1987 as cited by Kondasani, 2016) <sup>[28]</sup>. According to Parasuraman *et al.* (1988) <sup>[38]</sup>, service quality is the gap between expected and perceived service. Therefore, the quality of a service-oriented organization is a measure of the degree to which services provided should meet customer expectations. Parasuraman *et al.* (1985) <sup>[37]</sup> developed the SERVQUAL scale with originally identified ten service quality factors common to the service industry, such as tangibles, reliability, responsiveness, competence, courtesy, credibility, security, access, communication and a willingness to understand the customer. Later it was found a strong correlation among some of the dimensions of those initial ten dimensions of SERVQUAL. Thus, they combined these dimensions and developed the instrument with five dimensions. According to the later finding of Parasuraman *et al.* (1988) <sup>[38]</sup>, five common dimensions were introduced

based on 22 items, which could apply to many service organizations such as higher education, banks, insurance, tourism, health care, communications, credit card services, etc. Those five dimensions can be defined as bellow;

Tangibles	: Physical facilities, equipment, and appearance of personnel.
Reliability	: Ability to perform the promised service dependably and accurately.
Responsiveness	: Willingness to help customers and provide prompt service.
Assurance	: Employees' knowledge and courtesy and their ability to inspire trust and confidence.
Empathy	: Caring, individualized attention the firm provides its customers.

Assurance and empathy dimensions contain items representing original dimensions namely, communication, credibility, security, competence, courtesy, understanding the customers, and access (Parasuraman *et al.*, 1988) <sup>[38]</sup>. Cronin & Taylor (1992) <sup>[13]</sup> introduced the SERVPERF instrument and it was created on basis of the same scale of SERVQUAL and it illustrates that service quality is a form of attitude and it is better captured by performance only measure. Therefore, the SERVPERF model is also known as performance only model, and also it is considered as a short instrument since it is applicable only for a limited number of industries.

## 1.3. Customer Satisfaction

Customers are said to be satisfied if perceived performance of a product or service is met or exceed the expectations of the customer while if it does not meet, then the customers are said to be dissatisfied (Oliver, 1997) <sup>[35]</sup>. In the same way, if the perceived service quality matches the expectations of a patient, that patient is said to be satisfied and it is referred to as patient satisfaction. Shabbir *et al.* (2016) <sup>[41]</sup> conducted an empirical study in public and private sector hospitals in Pakistan and observed that patient satisfaction is significantly influenced by the service quality dimensions which they have considered. Likewise, many researchers have revealed a direct relationship between healthcare perceived service quality and patient satisfaction from the outcome of their studies. This reflects that greater perceived service quality leads to a greater level of customer satisfaction and vice versa (Cronin & Taylor, 1992) <sup>[13]</sup>. Hu *et al.* (2009) <sup>[23]</sup> recognized customer satisfaction as one of the important antecedents of loyalty. Therefore, both academics and professionals are very interested in getting a better understanding of customer satisfaction.

## 1.4. Customer Loyalty

Customer loyalty was considered as an attitudinal structure in some cases. It refers that the customers frequently develop an attitude towards purchasing or visiting the same place based on prior service experience. They also go through the cognitive process to decide whether to stay with the service or leave the service (Zeithaml, 2000) <sup>[46]</sup>. According to Oliver (1997) <sup>[35]</sup>, loyalty is the stated likelihood to engage in a particular behavior, and loyalty is considered to include a willingness to revisit and positive word-of-mouth intentions. As for many definitions' loyalty involved in rebuying behavior and positive word of mouth. According to Zeithaml *et al.*, (1996) <sup>[47]</sup>, rebuying behavior is defined as maintaining relationships with service providers, while word-of-mouth is defined as

communication in which customers will notify others regarding their experience with the product or service. If the experience is favorable that will build loyalty, rebuying behavior, and positive word of mouth and if it is unfavorable it creates negative word of mouth and the customer will switch to the competitors (Zeithaml *et al.*, 1996) [47]. Fatima *et al.* (2018) [17] defined patient loyalty as the frequent utilization of service when the patient has a positive attitude toward the service or hospital providing the service. Therefore, patients' needs and expectations must be fulfilled to achieve their loyalty. Moreover, Fatima *et al.* (2018) [17] studied the effect of healthcare service quality factors such as, physical environment, customer-friendly environment, communication, privacy and safety, and responsiveness influence the patient's satisfaction that helps in constructing loyalty intentions in hospitals of Pakistan and it was identified that those healthcare service quality aspects are positively related with patient loyalty which is mediated through patient satisfaction. According to the outcome of many studies, customer satisfaction plays the role of a mediator in the effects of service quality on customer loyalty.

Even though the weight of studies on patient loyalty is increasing but still the direct link between service quality and patient loyalty is being ignored concerning both public and private hospitals. Compared to other developing countries almost none of the empirical studies have focused to address the healthcare service quality conditions provided by both public and private sector hospitals from the context of Sri Lanka. Hence the purpose of this paper is to fulfill this gap.

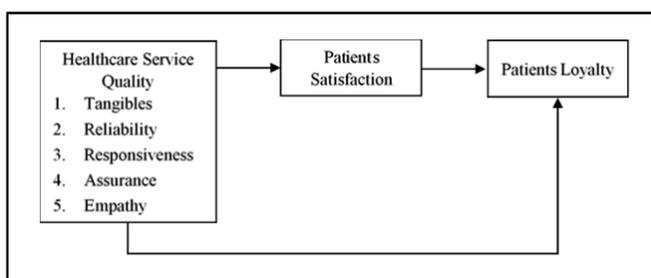
### 1.5. The Objectives of the Study

The main objective of the study is to investigate the relationship between hospital healthcare service quality and patient loyalty in public and private sector hospitals in Colombo district and to achieve the main objective some specific objectives can be derived as follows;

- To identify the direct effect of service quality and patient satisfaction on patient loyalty.
- To identify the indirect effects of service quality on patient loyalty with the mediating effect of patient satisfaction.

## 2. Materials and Methods

Based on the literature review, a conceptual framework is generated and it is illustrated in Figure 1. As for the figure, patient loyalty is considered as the dependent variable of the study while healthcare service quality dimensions are considered as the independent variables and patient satisfaction is the mediator variable that causes mediation in the dependent and the independent variables.



**Fig 1:** Conceptual Framework

According to the literature, it is clear that there is a considerable amount of theory that was tested in many contexts using a quantitative methodology. Since this study is testing the existing theory it can be considered as deductive research. The target population of the study is the patients who visit public and private hospitals in Colombo district. Since the population is large and unknown it is not possible to do a complete enumeration to assess every unit in the population, hence a sample of 400 respondents is selected based on Cochran's formula, i.e. minimum sample size of 385 and room for uncertainties. This study is consisting of multi-stage cluster sampling, which was used to select patients who live in the households of four main secretariat divisions of Colombo district. Raw data were collected on the field, from the patients through Self enumeration and personal interviews, and a structured questionnaire having 10 point Likert scale questions was used as the survey instrument. The questions of the questionnaire were developed based on the SERVQUAL instrument introduced by Parasuraman *et al.* (1988) [38] to measure service quality, and satisfaction & loyalty measurements of Zeithaml *et al.* (1996) [47]. Before distributing the questionnaire among the selected sample it was pretested using a sample of 50 respondents and amended. 400 questionnaires were distributed among the respondents, which finally 396 questionnaires have been received. Collected data was analyzed subject to Structural Equation Modelling (SEM) with the aid of the computer software package AMOS 21.

## 3. Results & Discussion

### 3.1. Demographic Analysis

Questionnaires were distributed among a total of 400 respondent patients who visit public and private hospitals in Colombo district and 396 questionnaires have been received. It implies that the response rate of the survey is 99%. The distribution of the sample reveals that the patients who visit public hospitals represent the highest proportion of respondents from the total respondents among public and private hospitals which is 205 respondents (51.8%) from the public sector and 191 respondents (48.2%) from private sector hospitals. Further, the majority of male patients have visited public hospitals (50.2%) while the private hospitals were visited mostly by the females (59.2%). In both public and private hospitals, the highest number of respondents are from the 31 to 40 years' age category and the lowest amount of respondents are from 20 years or below age category. Moreover, the majority of the respondents are earning an income between Rs. 25,000 to 49,999 in both sectors which are represented as 30.7% of the sample for the public sector and 25.1% of the sample for private sector hospitals.

### 3.2. Measurement Model

The measurement model specifies the indicators for each construct and enables an assessment of construct validity (Hair *et al.*, 2010) [20]. Figure 2 shows a visual diagram showing the initial measurement model. There are 30 observed variables, and there are 7 latent variables. For the sake of model identification, the number one (1) is assigned to selected arrows by AMOS 21 program.

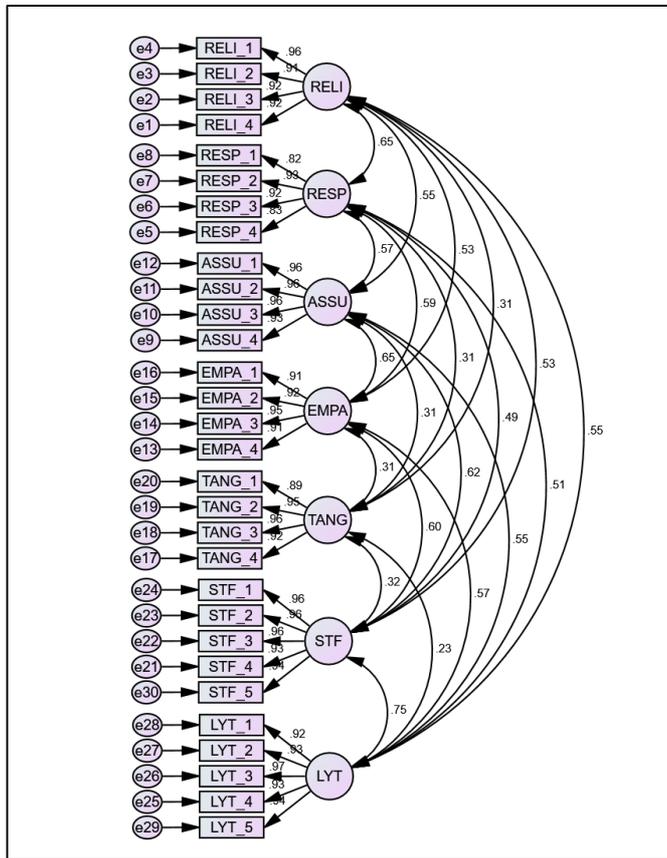


Fig 2: Measurement Model

Table 1: Results of the Goodness of Fit of the Measurement Model

Goodness of fit Index		Observed value	Acceptable value
Absolute fit indices	CMIN/DF	2.616	< 3
	GFI	0.857	0 – 1
	AGFI	0.827	0 – 1
	RMSEA	0.064	< 0.1
Incremental fit indices	TLI	0.959	0 – 1
	CFI	0.963	0 – 1
	RFI	0.935	0 – 1
	NFI	0.942	0 – 1
Parsimony fit indices	PGFI	0.708	0 – 1
	PRATIO	0.883	0 – 1
	PNFI	0.832	0 – 1
	PCFI	0.850	0 – 1

Table 1 shows the results of the goodness of the fit indices of the measurement model. According to Table 1, the CMIN/DF value is less than 3(2.616), RMESA value is less than 0.1 and other goodness of fit indices are close to 1 in the above table, the overall goodness of fit in the measurement model can be verified.

3.3. Validation of the Measurement Model

Tests involving convergent validity and discriminant validity were carried out to evaluate the validity of the measurement model. Convergent validity was evaluated by using three criteria which are individual standardized factor loadings, Average Variance Extracted (AVE), and composite reliabilities.

Table 2: Results of the Convergent Validity Test

Construct	No. of items	Standardized factor loadings		Average Variance Exacted	Composite Reliability
		Min	Max		
RELI	4	0.912	0.964	0.8635	0.7945
RESP	4	0.816	0.932	0.7662	0.7442
ASSU	4	0.925	0.961	0.9041	0.8633
EMPA	4	0.908	0.952	0.8508	0.7893
TANG	4	0.887	0.959	0.8662	0.8109
STF	5	0.932	0.963	0.9023	0.8762
LYT	5	0.922	0.972	0.8828	0.8359

Table 2 shows the results of testing the convergent validity of the measurement model. According to Hair *et al.* (2010) [20], the ideal level of standardized factor loadings for reflective indicators is equal to 0.5 or it exceeds 0.70. Table 2 indicates all the standardized factor loadings are greater than 0.8 and they are significant at 5%. Furthermore, all the AVE values are greater than 0.6 and all the composite reliability measures are greater than 0.7. Therefore, it can be

concluded that there is no problem with convergent validity requirements.

The squared inter-construct correlation estimates between each construct were compared with the AVE of each construct to assess discriminant validity. The AVE of all constructs should be higher than the squared inter-construct correlations estimates between that construct and all other constructs.

Table 3: Comparison of Squared Inter-construct Correlations with AVE

	RELI	RESP	ASSU	EMPA	TANG	STF	LYT
RELI	<b>0.863</b>						
RESP	0.425	<b>0.766</b>					
ASSU	0.306	0.321	<b>0.904</b>				
EMPA	0.277	0.343	0.421	<b>0.851</b>			
TANG	0.098	0.097	0.097	0.095	<b>0.866</b>		
STF	0.280	0.244	0.383	0.358	0.099	<b>0.902</b>	
LYT	0.298	0.262	0.304	0.329	0.054	0.559	<b>0.883</b>

Table 3 compares the squared inter-construct correlations estimates with the AVE for all constructs. Diagonal entries (in bold in Table 3) are the AVE for all constructs and sub-diagonal entries are the squared inter-construct correlations

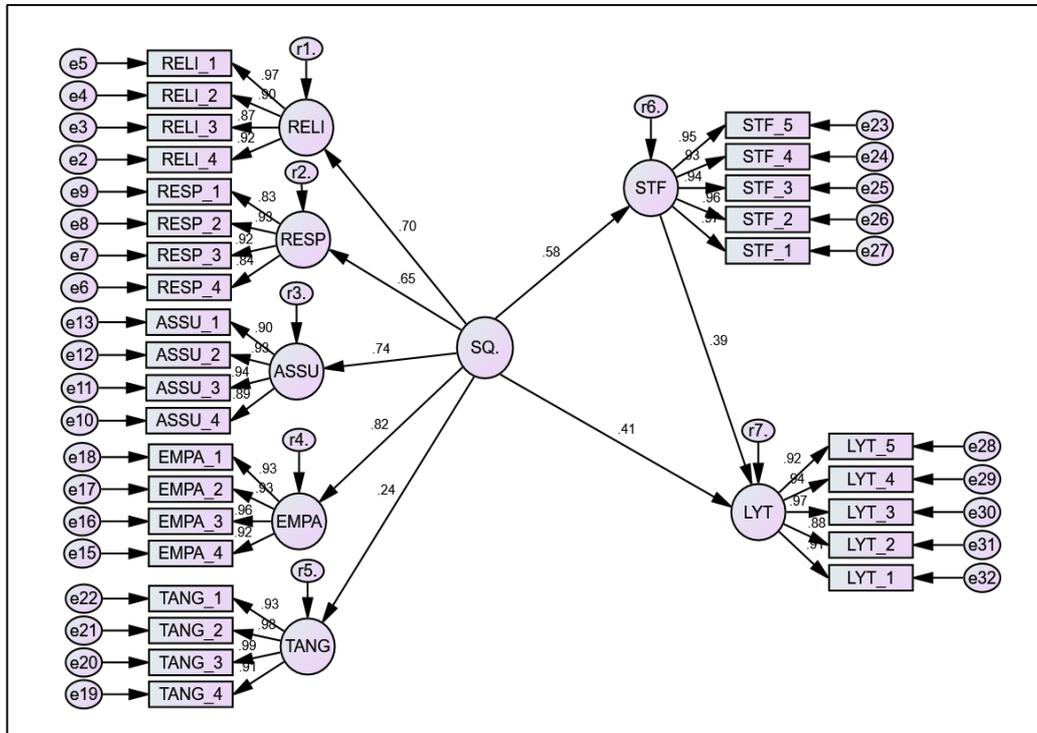
estimates among constructs. Table 3 indicates that the AVE for each construct was higher than the squared correlations between that construct and other constructs. Thus, it can be

concluded that there are no problems with discriminant validity.

### 3.4. Hypothesis Testing

The structural model shows the causal and correlational relationships between latent variables in a theoretical model. To identify the direct effect of service quality dimensions and patient satisfaction on patient loyalty of patients who

visits public and private hospitals, a structural model was developed. This structural model is comprised of three major latent constructs, of which one is exogenous (patient loyalty) and others are endogenous (service quality which consists of five dimensions and patient satisfaction). Figure 3 illustrates the structural model for the relationship between patient loyalty and endogenous constructs by considering public sector hospitals.



**Fig 3:** Structural Model for the Relationships in Public Hospitals

The results of the goodness of fit for the structural model of public hospitals indicates that CMIN/DF value is 2.124 which is less than three and RMSEA value (0.077) is less than 0.1 and other goodness of fit indices which is

incremental fit indices and parsimony fit indices are close to one. Therefore, it can be considered that the structural model for public hospitals is valid for further analysis.

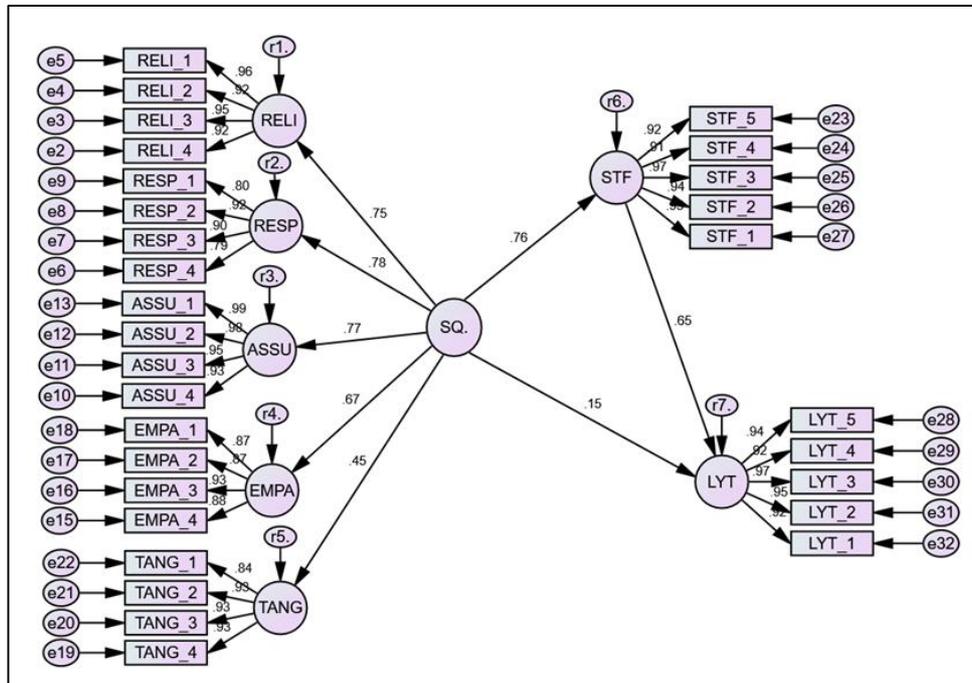
**Table 4:** Results of the Regression Weights of Public Hospitals

Path	Status	Path Coefficients	Standardized Path Coefficients	P-value
SQ → STF	Direct	2.365	0.578	0.001
STF → LYT	Direct	0.430	0.393	0.001
SQ → LYT	Direct	1.851	0.415	0.001
SQ → STF → LYT	Indirect	1.016	0.228	0.001

Table 4 reflects the direct and indirect effect of service quality on patient loyalty in public hospitals. According to table 4, it indicates that the service quality has a significant positive relationship with patient satisfaction ( $\beta = 0.578, P = 0.001$ ). It implies that service quality positively affects patient satisfaction. Also, the above table indicates that patient satisfaction has a significant positive relationship with patient loyalty ( $\beta = 0.393, P = 0.001$ ). Therefore, it can be concluded that patient satisfaction positively affects patient loyalty. It further implies that service quality has a significant positive direct relationship with patient loyalty

( $\beta = 0.415, P = 0.001$ ). Moreover, it indicates that the indirect effect of service quality on patient loyalty is also significant ( $\beta = 0.228, P = 0.001$ ). Therefore, it can be concluded with 95% confidence that there is a partial mediating effect by patient satisfaction for the relationship between service quality indicators and patient loyalty in the public hospital.

Figure 4 illustrates the structural model for the direct relationship between patient loyalty and endogenous constructs which is service quality and patient satisfaction by considering private sector hospitals.



**Fig 4:** Structural Model for the Relationships in Private Hospitals

The results of the goodness of fit for the structural model of private hospitals indicates that CMIN/DF value is less than three (CMIN/DF = 2.373) and RMSEA value is less than 0.1 (RMSEA = 0.082) and incremental fit indices and

parsimony fit indices are close to one. Hence, it can be considered that the structural model for private hospitals is validate for further analysis.

**Table 5:** Results of the Regression Weights of Private Hospitals

Path	Status	Path Coefficients	Standardized Path Coefficients	P- value
SQ → STF	Direct	1.694	0.764	0.001
STF → LYT	Direct	0.690	0.653	0.001
SQ → LYT	Direct	0.353	0.151	0.184
SQ → STF → LYT	Indirect	1.169	0.499	0.001

Table 5 presents the results of the regression weights which is used to identify the direct effects of the constructs in private hospitals. According to the table 5, it indicates that the service quality has a significant positive relationship with patient satisfaction ( $\beta = 0.764$ ,  $P = 0.001$ ). It implies that service quality positively effects on patient satisfaction. Also, above table indicates that the patient satisfaction has a significant positive relationship with patient loyalty ( $\beta = 653$ ,  $P = 0.001$ ). Therefore, it can be concluded that the patient satisfaction positively effects on patient loyalty. It further implies that service quality has not a significant positive direct relationship with patient loyalty ( $\beta = 0.151$ ,  $P = 0.184$ ). It implies that the service quality of privet hospital has not a significant direct relationship with patient loyalty. Nevertheless, table 5 indicates that the indirect effect of service quality on patient loyalty is significant ( $\beta = 0.499$ ,  $P = 0.001$ ). Therefore, it can be concluded with 95% confidence that there is a full mediating effect by patient satisfaction for the relationship between service quality indicators and patient loyalty in privet hospitals.

**4. Conclusions**

As for the outcome of the analysis a significant direct effect between service quality and patient loyalty is found only in public sector hospitals. Moreover, the results present that service quality has a significant positive effect on patient satisfaction, also patient satisfaction has a significant

positive effect on patient loyalty in the contexts of both public and private hospitals. The indirect effects of service quality on patient loyalty with the mediating effect of patient satisfaction, reveals that patients of public hospitals form a partial mediating effect by patient satisfaction for the relationship between service quality and patient loyalty while the privet hospitals form a full mediating effect by patient satisfaction for the relationship between service quality and patient loyalty.

Considering on healthcare service quality of a country is important as health involved in the development of the country. As this study focuses on the healthcare service quality and its impact on customer loyalty of public and private hospitals, it will help the hospital authorities to implement effective strategies in order to ensure superior quality of healthcare services to patients. Moreover, the study will present a clear idea of patient’s behavioral attitudes which is satisfaction and loyalty intentions towards the quality of healthcare services. By understanding the patients’ view towards healthcare service quality and implementing healthcare delivery strategies hospitals will be able to enhance patient satisfaction and patient trust. Furthermore, this research will provide literature for the future studies and add new knowledge regarding the relationship between healthcare service quality and customer loyalty in the Sri Lankan context.

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