

# The Impact of Service Quality towards Customer satisfaction in Private sector Hospitals- A Case Study on the ABC Private Hospital in Sri Lanka

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**Abstract** – Defining and measuring the quality of service has been a major challenge for health care marketers. A comprehensive service quality measurement scale (SERVQUAL) is empirically evaluated for its potential usefulness in a hospital service environment. Active participation by hospital management helped to address practical and user-related aspects of the assessment. The completed expectations and perceptions scales met various criteria for reliability and validity. Suggestions are provided for the managerial use of the scale, and a number of future research issues are identified.

Evidence in both the manufacturing and services industries indicates that quality is a key determinant of market share and return on investment as well as cost reduction. Two forms of quality are relevant to service-providing organizations. Technical quality in the health care environment, also referred to as quality in fact, is defined primarily on the basis of the technical accuracy of the diagnoses and procedures. Various techniques for measuring technical quality have been proposed and are currently in use in health care organizations (Joint Commission for Accreditation of Health Care Organizations 1987). Because this information is not generally available to the consuming public, knowledge of the technical quality of health care services remains within the purview of health care professionals and administrators. This study is based on the survey questionnaire answers given by 100 OPD patients in the hospital.

**Index Terms** – Customer satisfaction, HOSERVQUAL model, Healthcare sector, OPD Patients, Private Hospital, Service quality.

## 1 INTRODUCTION

THIS research indicates the situation in Sri Lankan Private healthcare sector based on a major private hospital based in the heart of Colombo. It is explicit that healthcare is a major concern for any human being despite of the facts of money, caste, job, education etc. Everyone struggles to live hardy and to obtain a better service for the payment they make. When concerning the characteristics of health care services, they are critical treatment processes of ABC hospital-OPD. Also they are repetitive process especially; Channeling, X-Ray, Medical Laboratory Services, Pharmacy, ICU Operations, Emergency Treatment, ECG & Cashier Services are frequently performed. Delivery mechanisms of these services have effects on each and every patient. Because these are the means through which ABC hospital directly linked with patients to facilitate them a good quality service. So it reflects the necessity to pay attention on the present mechanisms and service quality of healthcare service delivery of ABC hospital which ultimately meets Patient Satisfaction or Patient Dissatisfaction. Satisfied patients are more likely to maintain a consistent relationship with the hospital and help generate more income. By identifying sources of patient dissatisfaction, hospital can address system weaknesses, thus improving its risk management. Dissatisfied patients will not come back to the hospital and it will lead to loss of income as well as wastage of resources.

Considering the above facts, the strategy that is required should lead to delivery of equitable, accessible and satisfactory healthcare to all patients. Patient satisfaction is therefore of high value and it is useful to understand the need of patients. By understanding the importance of satisfaction and determining its existing level, healthcare services can be made relevant to the patients.

The purpose of this research is to report the results of a study that examined the usefulness of the SERVQUAL scale for assessing patients' perceptions of service quality in the hospital environment of ABC Hospitals (Private) Limited. At the practical level, the representativeness of the SERVQUAL items as they relate to hospital services was assessed using The HOSERVQUAL Model. In addition to content appropriateness, the length of the scale was a major consideration for the population under study, in this case, OPD patients of ABC Hospital. The scale was subjected to extensive reliability and validity assessment. The potential usefulness of the study results was enhanced by the fact that health care practitioners were actively involved in the research process.

## 2 PROBLEM STATEMENT

This research is done in order to answer the major problem in Sri Lankan healthcare sector which is "What is the perceived service quality by patients in private sector hospitals in Sri Lanka?" Moreover the research also provides answers to other subquestions such as

- "Why service quality is important to ABC Hospitals?"

- "Are patients satisfied with healthcare services of ABC Hospitals?"

- "To identify the importance of service quality for ABC Hospitals."

- "To assess the level of patient satisfaction with the healthcare services of ABC Hospitals".

It is without any doubt to say that there are very poor research done in order to find the service sector quality levels with regard to healthcare industry in Sri Lanka. This fact is the main reason for undertaking this research in order to render a social service for the human beings in Sri Lanka.

### 3 RESEARCH OBJECTIVES

The main objective is to find out the perceived service quality of the patients in ABC private hospital. This will enable to answer many questions such as,

1. To help the hospital to enhance their image by improving the current service levels.
2. To report the senior management levels about the findings with regard to this study which will improve the decision making.

### 4 LITERATURE REVIEW

#### 4.1 Service Quality

Service quality has become an important research topic in view of its significant relationship to costs (Crosby, 1979), profitability (Rust and Zahorik, 1993), customer satisfaction (Boulding et al., 1993), customer retention (Reichheld and Sasser, 1990), service guarantees (Kandampully and Butler, 2001), and financial performance (Buttle, 1996). Curry and Stark (2000) studied the use of SERVQUAL across nursing homes in the UK, which provided a useful benchmarking tool. Wan Edura Wan Rashid, Hj. Kamaruzaman Jusoff (2009) attempted to explore the concept of service quality in a health care setting. This research probes the definition of service quality from technical and functional aspects for a better understanding on how consumers evaluate the quality of health care. It adopts the conceptual framework of service quality frequently used by the most researchers in the health care sector. At the end the most of the researchers concluded that service quality in health care is very complex as compared to other services because this sector highly involves risk. Daniel Butler, Sharon L. Oswald, Douglas E. Turner (1996) investigated the effects of demographic factors on users and observers of perceived hospital quality and noted that previous research suggests the components of perceived service quality are industry specific, and that calls have been made for academics to integrate their theory into practice. At the end the researcher found that perceived quality is industry specific, users and observers differ in their perceptions of hospital quality and demographic factors do make a difference in perceived hospital quality. Ioannis E. Chaniotakis, Constantine Lymperopoulos (2009) aimed to study the effect of service quality (SQ) dimensions on satisfaction and word of mouth (WOM) for maternities in Greece. Based on Parasuraman et al.'s SERVQUAL variables, the authors tried to identify the effects of each variable to satisfaction and WOM. From survey result the author found that in addition to satisfaction, the only service quality

dimension that directly affects WOM, is empathy. In addition, empathy affects responsiveness, assurance and tangibles which in turn have only an indirect effect to WOM through satisfaction.

Abdul Majeed Alhashem, Habib Alquraini, Rafiqul I. Chowdhury (2011) aimed to identify factors affecting patient's satisfaction at primary health care clinics. The questionnaires were distributed in primary healthcare clinics that represent all health care regions in Kuwait. From the survey result researchers found that the majority (87%) of the patients responded that the time for communication between doctor and patient was not enough. 79% of the surveyed patients said they would go to the ETU (Emergency Treating Unit) of a hospital in future if needed instead of going to the primary care clinic. Regarding the quality of the communication relationship between doctor and patient most of the patients responded negatively.

Norazah Mohd Suki, Jennifer Chiam Chwee Lian, Norbayah Mohd Suki (2011) aimed to investigate whether patients' perceptions exceed expectations when seeking treatment in private healthcare settings in the Klang Valley Region of Malaysia. A survey was conducted among 191 patients in the Klang Valley Region of Malaysia to measure service quality of the private healthcare setting in Malaysia using SERVQUAL 5 dimensions model. The results revealed that the customers' perceptions did not exceed their expectations, as they were dissatisfied with the level of healthcare services rendered by private healthcare settings in that they felt that the waiting time of more than an hour to receive the service was excessive and, when there was a problem, the healthcare provider did not provide a response fast enough.

Raman Sharma, Meenakshi Sharma, R.K. Sharma (2011) aimed to address the issues of patient's satisfaction in health care sector. A cross sectional study was conducted to assess the patient satisfaction level visiting the hospital with the objectives to know the behavior and clinical care by the clinicians and medical staff and in terms of amenities available. A pre-designed and pre-tested structured questionnaire was given to the respondents after the patients had undergone consultation with the doctor. From the survey result, researchers found that 40% were of the view that services were costlier than their affordability.

Dr. Mamta Brahmhatt, Dr. Narayan Baser, Prof. Nisarg Joshi (2011) investigated on patients' perception of service quality in hospital services and understanding how the concept of service quality is adopted in health care sector. Based on Parasuraman et al.'s Modified SERVQUAL variables, they tried to identify the effects of each variable to patient satisfaction. Data were collected through field research among 246 patients and the data were analyzed using SPSS and Excel. The research found that service quality in health care is very com-

plex as compared to other services. Nevertheless it was clear that private hospitals are performing better in SERVQUAL dimensions.

#### 4.2 Patient Satisfaction

Patient Satisfaction is a person's feeling of pleasure or disappointment resulting from a service's perceived performance or outcome of a particular hospital in relation to his expectations. If the performance falls short of expectations, the patient is dissatisfied. If the performance matches the expectations, the patient is satisfied. If the performance exceeds expectations, the patient is highly satisfied.

Patient satisfaction has remained most important and essential focus point for all health care service providers. Risser (1975) pointed out that patient satisfaction can be defined as "The degree of congruency between a patient's expectations of ideal healthcare and his perception of real healthcare he receives. Linder Pelz (1982) defined patient satisfaction as the individual's positive evaluation of distinct dimensions of health care. Swan (1985) suggested that patient satisfaction is a positive emotional response that is desired from cognitive process in which patient compare their individual experience to a set of subjective standards.

The literature review revealed the following 3 important relationships

- I. Satisfaction was a function of expectations, perceived performance and disconfirmation
- II. Intension to repurchase was a function of patient satisfaction
- III. Choice was a function of expectations and intensions to repurchase

Patients, in general, receive various services of medical care and judge the quality of services delivered to them (Choi et al., 2004). Parasuraman, et al (1988) suggested a widely used model known as SERVQUAL for evaluating the superiority of the service quality. In the SERVQUAL model, Parasuraman et. al. identified the gap between the perception and expectation of consumers on the basis of five dimensions viz. Tangibles, Reliability, Responsiveness, Assurance and Empathy to measure consumer satisfaction in the light of service quality (Parasuraman A., Berry L, 1988).

In general, patient satisfaction surveys are used to examine the quality of the healthcare service provided (Lin and Kelly 1995). Much evidence has been documented for the service quality to satisfaction link in different consumer satisfaction studies including those in the area of health care marketing (Brady and Robertson 2001; Gotlieb, Grewal, and Brown 1994; Rust and Oliver 1994; Andaleeb 2001).

Chahal (2000), in his TRI COMPONENT model, pointed out that the loyalty of patients towards particular provider of medical service can be measured on the basis of three dimensions viz. Using Providers Again for the Same Treatment (UPAST), Using Providers Again for Different Treatments (UPADT) and Referring Providers to Others (RPO). In the TRI COMPONENT model, Chahal proved that all the above-mentioned loyalty measures depend on the overall service quality. He explained service quality of medical care with three latent constructs. These are doctors' performance, nursing performance and operational quality.

Brady and Cronin (2001) suggested a HIRARCHICAL model to measure perceived service quality considering three primary dimensions viz. Interaction Quality (Attitude, Behaviour & Experience), Physical Environment Quality (Ambient Conditions, Design & Social Factors) and Outcome Quality (Waiting Time, Tangibles & Value of Outcome Quality). In their approach, Brady and Cronin emphasized on customers' expectation and perception of different dimensions of services in order to measure service quality.

Aragon et.al. (2003) conducted a research in emergency department of hospitals and suggested the PRIMARY PROVIDER model to measure patient satisfaction considering three dimensions viz. Physician Service (SP), Waiting Time (SWT) and Nursing Care (SN). He applied multiple structural equation models for developing a hierarchical relationship between patient satisfaction and above mentioned dimensions which define the attributes of quality of health care service. Aragon et.al. proved that overall patient satisfaction depends on SP, SN and SWT.

According to Shi and Singh (2005), from the perspective of patient satisfaction, quality has been explained by two ways,

- a) Quality as an indicator of satisfaction that depends on individual's experiences about some attributes of medical service viz. Comfort, Dignity, Privacy, Security, Degree of Independence, Decision Making Autonomy and Attention to Personal Preferences.
- b) Quality as an indicator of Overall Satisfaction of Individuals with Life and Self-Perceptions of Health after some Medical Intervention.

The patient satisfaction depends on three elemental issues of health care system. These are Perception of Patients regarding Quality Health Care Service, Good Health Care Providers and Good Health Care Organization.

A study conducted by Safavi (2006) has revealed that satisfaction with hospital experience was driven by dignity and respect, speed and efficiency, comfort, information and commu-

nication and emotional support. During 2004 and 2005, a focus group interview was conducted by the Agency of Health Care Research and Quality and Centers for Medicare and Medicaid Services (CMS) to find out how patients perceive the quality of health care. In this study it was observed that patients, usually, preferred four qualities of health care services viz. Doctor Communication Skill, Responsiveness of Hospital Staff, Comfort and Cleanliness of the Hospital Environment and Communication of Nursing Staff.



Figure 1: Dimensions of Patient Satisfaction Data

### 4.3 SERVQUAL Model

Due to intangible in nature service quality is difficult to measure and defining the parameter to evaluate the quality of services delivered to the customer was the major issue in the beginning. SERVQUAL instrument was developed during the late 1980s and early 1990s by Valerie A. Zeithaml, Parasuraman and Leonard L. Berry. They explored that Customer Perception about the service quality is influenced by 5 gaps and it is also known as GAP model. Gap 1 shows the difference between Customer Expectations and Management Perception of Customer Expectations. Gap 2 is the difference between Management Perceptions about Service Quality and Service Quality Specifications. Gap 3 is the difference between Service Quality Specifications and Service Delivery. Gap 4 is the difference between Service Delivery and External Communication to Customers and gap 5 is the difference between Expected and Perceived Service Quality.

SERVQUAL model is based on gap 5 that was influenced by first four gaps. Earlier, service quality was measured by comparing customer expectations with customer perceptions on the basis of ten dimensions which includes; Reliability, Tangibility, Communication, Security, Credibility, Competence, Understanding, Access, Understanding Customers, Responsiveness. Further this model was refined by Parasuraman, that service quality can be measured on the basis of five dimensions; Reliability, Tangible, Responsiveness, Assurance and

Empathy on the basis of customer expectation and perception. It explained all the above-mentioned dimensions with the help of twenty two statements that have been identified as attributes creating those five dimensions (Parasuraman et. al., 1988, Bhattacharjee, 2010). Babakus and Mangold (1992) identified SERVQUAL as a reliable and valid model in the hospital environment. O'Conner et. al. (2001) found SERVQUAL instruments suitable to analyze the perceptual gap in understanding patient expectation among health care stakeholders. Pakdil and Harwood (2005) found SERVQUAL is an useful model to measure the differences between patients' preferences and their actual experiences. According to Chunlaka (2010), SERVQUAL helps understand what the customers' value is all about and how well an organization meets the needs and expectation of consumers of hospitals. Qin and Prybutok (2009) mentioned all the five dimensions of the service quality in SERVQUAL instrument are significant and reliable in a health care setting.

### 4.4 HOSERVQUAL Model

The five dimensions of SERVQUAL were adapted and modified in this study to develop the HOSERVQUAL model. SERVQUAL has emerged as the most popular standardized questionnaire to measure service quality. The instrument poses structured and paired questions of each designed variable to assess customers' expectations of service provision and the customers' perceptions of what was actually delivered. The **Five-Point Likert Scale** is used in this study. A pre-test was conducted with a group of patients, and minor changes to the scales were made accordingly to ensure that the questions were not repetitive. Researcher has used 30 structured and paired questions to measure service quality of ABC Hospitals (Pvt) Ltd.

#### 4.4.1 Physical Aspects

The first dimension, Physical Aspects encompasses the appearance of the physical facilities and the convenience offered to the customer by the layout of the physical facilities. The literature suggests that appearance is important to customers. It also suggests that customers (patients) value the convenience offered during the treatment that physical aspects such as layout offer.

#### 4.4.2 Reliability

The second proposed dimension is Reliability. It has two sub-dimensions and other variations. Patients view reliability as a combination of doing it right and availability of all the information regarding treatment. So, the sub-dimensions of reliability are promises (and information availability. methods of evaluating, calculating, and improving the overall reliability of the complex hospital system. The Institute for Healthcare Im-

provement (IHI) believes that applying reliability principles to healthcare has the potential to help reduce “defects” in care or care processes, increase the consistency with which appropriate care is delivered, and improve patient outcomes (satisfaction).

**4.4.3 Encounters**

The third proposed dimension is Encounters. It has two sub-dimensions, Responsiveness and Empathy. These sub-dimensions are very closely related and capture how the customer is treated by the employee.

**4.4.4 Responsiveness**

This is defined as the outcome that is achieved when health systems’ institutions and institutional relationships are designed in such a way that they take account of and respond appropriately to the universally legitimate expectations of individuals. It is a separate variable to measure the increase in well-being derived from having responsive health care services (measurement of health outcomes captures the improvement in health resulting from treatments or health system processes that are more responsive).

Healthcare Empathy involves, ability to: (a) understand the patient’s situation, perspective, and feelings (and their attached meanings); (b) to communicate that understanding and check its accuracy; and (c) to act on that understanding with the patient in a helpful (therapeutic) way. Research on the effect of empathy on health outcomes in primary care is lacking, but studies in healthcare suggest it plays a key role.

**4.4.5 Process**

The fourth proposed dimension is Process. Process is critical for the success of any medical service. This dimension does not have any sub-dimension. In this scenario I used the current procedure of Out-Door Patient Department of ABC Hospitals (Pvt) Ltd to measure and increase the service quality and patient satisfaction.

**4.4.6 Policy**

The fifth proposed dimension of Policy captures aspects of service quality that are directly influenced by hospital policy. This dimension does not have any sub-dimension.

An explicit health policy can achieve several things: it defines a vision for the future; it outlines priorities and the expected roles of different groups; and it builds consensus and informs people. (WHO, 2013)

Based on the literature review the conceptual framework has designed as follows;

**5 CONCEPTUAL FRAMEWORK**

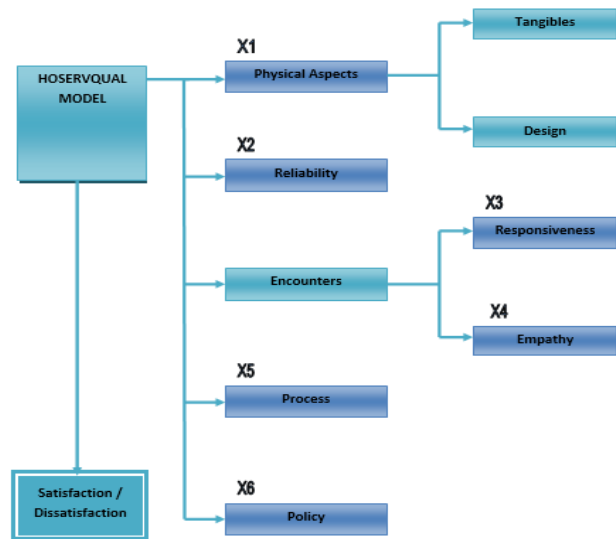


Figure 2: Conceptual Framework

**6 RESEARCH METHODOLOGY**

The Out-Door Patient Department of ABC Hospitals (Pvt) Ltd is the population of this study. Here ABC Hospitals OPD refers to its outdoor patients, medical specialists, nursing staff, executive staff, non-executive staff, sub units, physical resources and procedures. Convenient access and the relevance of the research problem are the reasons to the selection of this population. The sample was mainly determined from the OPD patients of ABC who are the direct and key beneficiaries of the health care services. Therefore their opinions can be valued more. People who had services of ABC Hospitals within a six-month period were asked to complete a self-administered questionnaire. In order to collect quantitative data for the study, a total of 100 questionnaires were printed and distributed. 50% of respondents involved in to make conclusions regarding the service process quality of ABC Hospitals (Pvt) Ltd. Patients sample is drawn from the OPD patient register, in the means of age, how much time they have spent in OPD and what kind of treatment they have received. The portion of sample is identified as 50. Here simple random sampling technique being used entirely.

**Data Collection**

*Personally Administrated Questionnaires* will be designed and used to get the patients views on existing service delivery methods, service quality and identify their expectations regarding those provided services.

*Semi Structured Interviews* for medical specialists and nursing staff with the purpose of understanding the in depth features

and relevance of existing delivery mechanisms of health care services and their view about it.

*Step 1* - Select a hospital service quality dimensions of which you want to assess. Using the SERVQUAL instrument, first obtain the score for each of the 25 expectation questions. Next, obtain a core for each of the perception questions. Calculate the Gap Score (Perception – Expectation) for each of the statements.

*Step 2* - Obtain an average Gap Score for each dimension by assessing the Gap Scores for each of the statements that constitutes the dimension and dividing the sum by the number of statements making up the dimension.

*Step 3* - Transfer the average dimension SERVQUAL scores (for all five dimensions) from the SERVQUAL instrument. Sum up the scores and divide it by five to obtain the un-weighted measure of service quality.

*Step 4* - Calculate the importance weights for each of the five dimensions constituting the SERVQUAL scale.

*Step 5* - Enter the average SERVQUAL score for each dimension and the importance weight for each dimension. Then multiply the average score for each dimension with its importance weight.

*Step 6* - Add the weighted SERVQUAL scores for each dimension to obtain the overall weighted SERVQUAL score.

## 7. DATA ANALYSIS

### 7.1 Descriptive Statistics

Data collected from Methodology had to be classified and tabulated and then treated with scientific statistical methods to get the results. **IBM SPSS Version B 21** software is used to do the analysis.

Table 1: Descriptive Statistics Summary

	Physical Aspects	Reliability	Responsiveness	Empathy	Process	Policy	Patient Satisfaction
N	50	50	50	50	50	50	50
Valid	50	50	50	50	50	50	50
Missing	0	0	0	0	0	0	0
Mean	4.56	4.512	4.54	4.60	4.53	4.68	4.54
Median	4.714	4.80	4.333	4.66	4.25	5.00	4.666
Mode	5.00	4.20 <sup>a</sup>	4.33	5.00	4.25	5.00	5.00
Std. Deviation	0.416	0.457	0.361	0.374	0.395	0.374	0.381
Variance	0.173	0.209	0.130	0.141	0.155	0.140	0.146
Skewness	-0.341	-0.283	0.074	-0.030	0.056	-0.710	-0.032
Std. Error of Skewness	0.337	0.337	0.337	0.337	0.337	0.337	0.337
Kurtosis	-1.359	-1.515	-1.371	-1.338	-1.707	-0.853	-1.527
Std. Error of Kurtosis	.662	0.662	0.662	0.662	0.662	0.662	0.662
Minimum	3.86	3.80	4.00	4.00	4.00	4.00	4.00
Maximum	5.00	5.00	5.00	5.00	5.00	5.00	5.00

a. Multiple modes exist. The smallest value is shown

According to the descriptive statistics analysis most of the patients (88%) are satisfied with the Physical Aspects of ABC. The frequency level over 4.0 is the satisfied level and it shows 44 patients agreed to the current Physical Aspects involved in the hospital. However, 84% of the patients are satisfied with the Reliability of ABC. The rate of recurrence level over 4.0 is the satisfied level and it shows that 42 patients agreed or strongly agreed to the Reliability of the hospital. The frequency level over 4.0 is the satisfied level and it shows that all the patients (50) are happy with the Responsiveness of the hospital. Empathy dimension describes that suggests that all the patients are positively affected by the Empathy in ABC. The frequency level over 4.0 is the satisfied level and it shows that again all the patients are satisfied by the Empathy that directly influences the Patient Satisfaction. Based on the descriptive statistics it shows that the 100% of the patients are satisfied with the Process of ABC. The rate of recurrence level over 4.0 is the satisfied level and it shows that all the 50 patients agreed or strongly agreed to the current Process of the hospital. When considering the policy it shows that all the patients are satisfied with the Policy of ABC. The frequency level over 4.0 is the satisfied level and it shows that all the 50 patients are delighted with the Policy of the hospital. Finally, above table illustrates that most of the patients are favorably affected by the Healthcare Service Process of ABC Hospitals (Pvt) Ltd. The frequency level over 4.0 is the satisfied level and it shows that all the respondents positively reacted to the existing Healthcare Service Process that directly deals with Service Quality towards Patient Satisfaction.

According to **Inferential Statistics**, The correlation of variables has been explained under Correlation Matrix (Table 14). The above table reveals that PS has a positive correlation (0.866\*\*) with PA indicating that if Physical Aspects get favorable Patient Satisfaction will also be increased. The significance level remains at 0.01 levels. Likewise, the relationship of RL, PR and PL also significantly and positively connected at 0.01 levels.

	PA	RL	PR	PL	PS
PA		0.846**	0.839**	0.780**	0.866**
RL	0.846**		0.956**	0.975**	0.979**
PR	0.839**	0.956**		0.897**	0.966**
PL	0.780**	0.975**	0.897**		0.923**
PS	0.866**	0.979**	0.966**	0.923**	
<b>N = 50</b>					

Table 2: Correlation Coefficient Matrix

**7.2 Bivariate Correlations**

In this study, researcher introduced 4 hypotheses. The Bivariate correlations of the entire hypothesis at 0.01 levels of significance are shown as follows.

		Physical Aspects	Reliability	Process	Policy	Patient Satisfaction
Physical Aspects	Pearson Correlation	1	0.846**	0.839**	0.780**	0.866**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N	50	50	50	50	50
Reliability	Pearson Correlation	0.846**	1	0.956**	0.975**	0.979**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000
	N	50	50	50	50	50
Process	Pearson Correlation	0.839**	0.956**	1	0.897**	0.966**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000
	N	50	50	50	50	50
Policy	Pearson Correlation	0.780**	0.975**	0.897**	1	0.923**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000
	N	50	50	50	50	50
Patient Satisfaction	Pearson Correlation	0.866**	0.979**	0.966**	0.923**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	50	50	50	50	50

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 3: Bivariate Correlations

**7.3 Full Hypothesis and Null Hypothesis**

**H<sub>1</sub>** There is a positive correlation exists between Physical Aspects and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**H<sub>01</sub>** There is a negative correlation exists between Physical Aspects and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**H<sub>2</sub>** There is a positive correlation exists between Reliability and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**H<sub>02</sub>** There is a negative correlation exists between Reliability and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**H<sub>3</sub>** There is a positive correlation exists between Process and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**H<sub>03</sub>** There is a negative correlation exists between Process and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**H<sub>4</sub>** There is a positive correlation exists between Policy and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**H<sub>04</sub>** There is a negative correlation exists between Policy and Patient Satisfaction in ABC Hospitals (Pvt) Ltd.

**7.4 Regression Analysis**

**7.4.1 Physical Aspects**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.866 <sup>a</sup>	0.749	0.744	0.193

a. Predictors: (Constant/Independent Variable), Physical Aspects

b. Dependent Variable: Patient Satisfaction

Table 4: Model Summary of Physical Aspects

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.919	0.304		3.024	0.0025 ***
	Physical Aspects	0.794	0.066	0.866	11.972	4.97e-033 ***

a. Dependent Variable: Patient Satisfaction

Table 5: Coefficients of Physical Aspects

According to the data analysis of the research;

$$PS = 0.919 + 0.794 PA$$

As per the equation above, it takes a positive value to say that when Physical Aspects are favorable inside the hospital, Patient Satisfaction gets increased. The P value of it is 4.97e-033 \*\*\* and that is below the rejection level of 0.01. Therefore, H<sub>1</sub> is accepted and H<sub>01</sub> is rejected with '0.01' level of significance. Therefore, it can be assumed that there is a positive correlation exists between Physical Aspects and Patient Satisfaction.

**7.4.2 Reliability**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.979 <sup>a</sup>	0.958	0.957	0.078

a. Predictors: (Constant/ Independent Variable), Reliability

b. Dependent Variable: Patient Satisfaction

Table 6: Model Summary of Reliability

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.854	0.112		7.634	2.28e-014 ***
	Reliability	0.817	0.025	0.979	33.118	1.65e-240 ***

a. Dependent Variable: Patient Satisfaction

Table 7: Coefficients of Reliability

$$PS = 0.854 + 0.817 RL$$

As per the equation above, it takes a positive value to say that when Reliability is favorable inside the hospital, Patient Satisfaction gets increased. The P value of it is 1.65e-240 \*\*\* and

that is below the rejection level of 0.01. Therefore, H<sub>1</sub> is accepted and H<sub>0</sub> is rejected with '0.01' level of significance. Therefore, it can be assumed that there is a positive correlation

7.4.3 Process

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.966 <sup>a</sup>	0.933	0.931	0.099

a. Predictors: (Constant/ Independent Variable), Process  
b. Dependent Variable: Patient Satisfaction

Table 8: Model Summary of Process

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.293	0.165		1.775	0.0759*
	Process	0.938	0.036	0.966	25.831	4.02e-147 ***

a. Dependent Variable: Patient Satisfaction

Table 9: Coefficients of Process

$$PS = 0.293 + 0.938 PR$$

As per the equation above, it takes a positive value to say that when Process is favorable inside the hospital, Patient Satisfaction gets increased. The P value of it is 4.02e-147 \*\*\* and that is below the rejection level of 0.01. Therefore, H<sub>1</sub> is accepted and H<sub>0</sub> is rejected with '0.01' level of significance. Therefore, it can be assumed that there is a positive correlation exists between Process and Patient Satisfaction

7.4.4 Policy

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.923 <sup>a</sup>	0.853	0.850	0.148

a. Predictors: (Constant/Independent Variable), Policy  
b. Dependent Variable: Patient Satisfaction

Table 10: Model Summary of Policy

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.137	0.265		0.516	0.6060
	Policy	0.941	0.056	0.923	16.674	2.02e-062 ***

Table 11: Coefficients of Policy

$$PS = 0.137 + 0.941 PL$$

As per the equation above, it takes a positive value to say that when Policy is favorable inside the hospital, Patient Satisfaction gets increased. The P value of it is 2.02e-062 \*\*\* and that is

below the rejection level of 0.01. Therefore, H<sub>1</sub> is accepted and H<sub>0</sub> is rejected with '0.01' level of significance. Therefore, it can be assumed that there is a positive correlation exists between Policy and Patient Satisfaction.

7.5 Hypothesis Testing Summary

	Hypothesis	P Value	Remarks
H <sub>1</sub>	There is a positive correlation exists between Physical Aspects and Patient Satisfaction in ABC Hospital	4.97e-033 ***	Accepted
H <sub>2</sub>	There is a positive correlation exists between Reliability and Patient Satisfaction in ABC Hospital	1.65e-240 ***	Accepted
H <sub>3</sub>	There is a positive correlation exists between Process and Patient Satisfaction in ABC Hospital	4.02e-147 ***	Accepted
H <sub>4</sub>	There is a positive correlation exists between Policy and Patient Satisfaction in ABC Hospital	2.02e-062 ***	Accepted

Table 12: Hypothesis Testing Summary

8. DISCUSSION AND CONCLUSION

The key objectives of this Research (**Adapting SERVQUAL to ABC Hospitals**) are to find out '**Importance of Service Quality for ABC Hospitals (Private) Limited**' and '**Assess the Level of Patient Satisfaction with the Healthcare Services of ABC Hospitals (Private) Limited.**'

As any other hospital ABC Hospitals' performance, service quality and outcome depends on the patient satisfaction. 100 questionnaires are distributed to 100 OPD patients. From this sample 50% of patients responded as useful surveys are returned which indicates the relationship between the respective variables. The result of the surveys shows that there are a positive relationships between dependent and independent variables.

According to the extracted results from data analysis, it shows that the satisfaction availing by patients from hospitals perceive that ABC Hospitals is making visible effort in order to deliver better quality of services to their patients. The studied Service Quality construct does have a significant impact on Patient Satisfaction. It is also observed from this study that Patient Satisfaction has a positive correlation in accordance with six observed independent variables namely, 'Physical Aspects', 'Reliability', 'Responsiveness', 'Empathy', 'Process and 'Policy'. Results of these six factors showed that the modified model for Service Quality, HOSERVQUAL model had a good fit and the model is valid and reliable.

As stated in the Hypothesis Testing Summary (Table 12), Physical Aspects, Reliability, Process and Policy (Hypothesis) have a positive relationship with the Patient Satisfaction in ABC Hospitals (Pvt) Ltd. According to the Correlation Matrix, Reli-



ability and Process play a major role in satisfying patients, followed by Policy and Physical Aspects.

Hospital's Service Quality depends on the fact that how the patients are satisfied from the existing healthcare service delivery mechanism. So when the Service Quality will be high then the Patient Satisfaction will be also high. This study statistically measures the dependency of the Patient Satisfaction on six variables which are Physical Aspects, Reliability, Responsiveness, Empathy, Process and Policy.

Basically Patient Satisfaction depends on Physical Aspects, Reliability, Responsiveness, Empathy, Process and Policy of a hospital and in this study researcher is able to identify that Physical Aspects, Reliability, Process and Policy plays a crucial role in Patient satisfaction of ABC Hospitals. Sri Lanka is though a developing country it has an accepted significant level regarding healthcare services.

This study set out to expand understanding of how Patients evaluate Service Quality in the context of a Developing Economy, an environment that differs significantly from the European and American context. The research reinforces the fact that Service Quality is a complex and multidimensional but an effective construct. Researcher's findings have important implications for private hospital and public hospital owners, managers, government officials, academics and other related parties in the healthcare service. Nevertheless ABC Hospitals (Pvt) Ltd manages to maintain its image as a competitive healthcare service provider in the health care industry in Sri Lanka.

## 9. RECOMMENDATIONS

- Hospital administrations need to apply a more flexible Policy in order to gather systematic feedback from their patients and to establish visible and transparent procedures.
- In the future studies, the population should include both types of the patients, those who attend the OPD and those who already in-house the hospital.
- Patient satisfaction surveys should be studied in the community. Community based survey is another effective way of knowing the level of patient satisfaction.
- Further studies should include the other hospitals of the area (General Hospital, Kalutara) in order to compare difference in service delivery and service quality to get the patient satisfaction/dissatisfaction indication more accurately.

- ABC OPD is the place crowded with patients who have general medical conditions, therefore recommended that long queues should be avoided.
- Questionnaires were designed in English medium made it harder to get the responses from a fair bit amount of patient portion in the sample (50%). So recommended that questionnaires should be designed in both English and Sinhala medium.
- Physical Aspects such as OPD Seating, Air Condition, Sanitation Facilities, Drinking Water Filters and Noise Reduction should be properly arranged.
- Patient satisfaction and service quality both should be considered together for the stability of the hospital which is in a competitive environment.
- One such main limitation of the study is that the sample size is very small with regard to the population of the ABC hospital, so the findings are not in an extended viewpoint due to small sample size.

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