ROLE OF PRICE AS MODERATING VARIABLES BETWEEN HOSPITAL SERVICE QUALITY DIMENSIONS AND CUSTOMER LOYALTY FROM THE PATIENTS PERSPECTIVE

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Abstract : *The study examined Role of Price as Moderating variable between Hospital Service Quality Dimensions and Customer Loyalty from the Patients perspective in the various hospitals (single specialty vs. multi specialty) located in Bangalore. The theoretical model is developed based on the literature which includes service quality, patient's satisfaction and hospital administration. The study covered patients who visited hospital recently within 3 months as a unit of analysis. In both single specialty and multi specialty 292 samples were collected by convenient sampling technique. The model is tested by using Structural Equation Modeling (SEM) as per the guide lines of source authors of SEM literature (Brown, Kline 2005) The outcome of the study showed that price has played a role significantly as a moderating variable between Service quality dimensions and customer loyalty. When patients are too price sensitive, the customer loyalty is decreasing; similary when patients are not price sensitive, the customer loyalty score is increasing. All the Service Quality dimensions showed the expected sign with customer loyalty. Suggestion emphasizes the role of service quality dimension to extend the customer loyalty in the health care sector with respect to Price in the Indian scenario. The changes are noticeable.*

Key words : *Hospital service quality, Customer Loyalty and SEM*

Introduction

In Indian scenario, especially Health care sectors, sea level changes have occurred in the recent past compared to the yesteryears. In terms of technology, health care facilities, patient's perception on hospitals, etc-everything has changed drastically. Service Quality is more subjective-the way how customers perceive, in addition to how service providers make them to perceive. In a stiff competition era, business results are backed by loyal customers, new customers from old customer referrals are the key; this is the core idea of constructs, namely Customer Loyalty. This research paper made attempts to test theoretical model, which incorporates, service quality dimensions and its impact on customer loyalty in health care sectors, Bangalore. Though several studies have been conducted in the western context, there is a paucity of such studies in the Indian scenario. Especially, studies are based on rigorous statistical techniques like Structural Equation Modeling. This study is an attempt to fill the gap of testing the theoretical model which is basically built on service quality dimension and its impact on customer loyalty.

Review of Literature

Parasuraman, Zeithaml, and Berry (1985) concentrated on quality measure that could be used across a wide variety of service

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domains. The model provides the most information and the most accurate portrayal of the information. The model was developed in the economics of information by Darby and Karni (1973). The model was refined and was developed in theory for hospital services by Lynch and Schuler (1990). The study of the same authors, (1998) revealed that the quality of hospital services become important in the selection of the hospitals. Three factors such as search, experience and credence are the economics of information theory for analyzing how the consumers judge the quality of hospital services. Boscacino and Steiber (1982) also addressed the issue of hospital choice factor. They examined hospital choice for general care, specialized care and emergency care as distinct choice scenarios and identified the most important criteria for selecting a general care facility to be convenient location, physician recommendation and past experience. The findings of their study are that the consumers rely on signals in forming their judgments about the quality of the hospital facilities.

Mohammed Shahedul Quader (2009) revealed that one of the most important quality dimensions in health care today is patient satisfaction. One way of achieving satisfaction is by understanding and meeting patient expectations in terms of quality. Once an organisation achieves high levels of customer satisfaction, they will realise the benefits that it brings throughout the organization. The study suggested that, through understanding patient expectations, an organisation can improve their services; therefore, improving patient satisfaction ultimately helps to increase income to improve services. Suleiman et al., (March 2011) assessed the quality level of healthcare service provided by king Abdullah Educational Hospital. As perceived by patients, he investigated service quality as healthcare, communication, personal caring, equipments and facilities, location and accessibility. The results from the study showed that health care service that patients received from the hospital is well empowered to provide such a quality health service. The respondents were of the opinion that, the health care service was overpriced because of quality treatment and is performed by qualified professional with long experience, Laila Ashrajun and Mohammad Jasim Uddin (2011) have revealed that quality assurance has emerged as an internationally important aspect in the provision of health care services. The expectations of the patients have also increased day by day and they have started questioning the adequacy of patient care not only for quality of service rendered but also for the quality that is provided by the hospitals. The study found that the powerful predictors for patient satisfaction with hospital services are doctors treatment, services and behavior of nurses and ward boys. N Mekoth, G.P Babu, V.Dalvi, N Rajanala and K.Nizomadinov (2011) identified some of the critical service encounters that the outpatients undergo in a health care facility. The service encounter perceived by the patients leads to patient's satisfaction, repeat visit, and recommendation intention. The study revealed that both the physician quality and laboratory quality have been found to be significantly related to patient satisfaction. Courtesy shown by the outpatient staff, perceived length of waiting time, or even the service scope, did not influence patient satisfaction. The higher the perceived physician related quality of medical service & the courtesy of hospital staff, the higher the patient satisfaction, repeat visit intention of the patient and recommendation intention of the patient. S.M.Irfan and A.Ijaz (2011) have compared the quality of healthcare services delivered by the public and private hospitals to gain in Pakistan.

The dimensions used in the study were Empathy, Responsiveness, Assurance, Tangibles and Timeliness. The Assurance among public hospitals is higher than that in private hospitals. The reason may be that highly qualified experts in surgery are serving in these hospitals. The empirical findings are evident that private hospitals provide quality health services to the patients. It is also evident that the hospitals (whether public or private) in important cities provide a reasonably good quality health care services. Aldana (2001) has explained that the most powerful predictor for client satisfaction with the government services is provider behavior, especially respect and politeness. To the government & for the patients this aspect is much more important than the technical competence of the provider. There is a wide spread dissatisfaction among patients about bribe, gifts and tips culture. This has emerged as an important factor for showing a negative relationship with patient satisfaction.

Customer Loyalty

Mahazril Aini Yaacob (2011) concluded that the service quality plays a prominent role in the organization performance in order to maintain the customer's loyalty. Various studies have been conducted to know whether services quality offers affect the customer's satisfaction. Subhash Lonial, Dennis Menezes, Mehven Tarim, Ekrem Tatoglu and SeliniZaim (2010) in the study have used Servqual proposed by Parasuraman, Zeithaml and Berry (1985), for measuring customer perceptions of service quality across a wide variety of service environments. It was measured on a seven-point scale.

Thomas L. Baker, Steven A. Taylor (1997) provided evidence that the relationship between quality perception and satisfaction judgments in the formation of future purchase intention may be very different in health service setting relative to other service settings. The quality of care and patient satisfaction hold a competitive advantage in today's dynamic health service market. Service quality is presently considered to be the best conceptualized as a long term attitude reflecting perceptions of the relative superiority or excellence in service firm performance. Satisfaction judgments appear super ordinate to quality perceptions of marketing outcomes. This research relates to the still poorly understood relationship between quality perception and satisfaction judgments in the process of forming patient's intentions and subsequent behaviors. The results showed that not much difference for profit and not profit hospitals. The result also identified that patient satisfaction does not appear to moderate the service quality purchase intention relationship in either the for profit or not – for – profit hospitals. Hence satisfaction significantly contributed to the formation of future service purchase intentions.

Simon S. K. Lam (1997) in the study has used servqual to measure the quality of service in health care services in Hongkong. Servqual has been used to examine the validity and also analyses its applicability in the Health care sector in Hongkong. The findings suggest that the expectations scores may not be contributing to the strength of the relationship between service quality and the overall quality rating variables. The study suggested that prompt and competent service are the most important factors patients expect from hospitals, it is also suggested that physical elements are perceived to be least important and the patients are generally satisfied with the aspect of service quality. The result also highlighted areas for attention to improve healthcare service quality. Donald J. Shaemwell and Ugur Yavas (1999) revealed

that most important concept in marketing are multifaceted. Practitioners and theories have taken very different approaches and models to the measurement of service quality in hospital services. Pizam and Ellis (1999) indicated that patient satisfaction and perceived quality are positively and strongly related in a health care environment. A measure of one can serve as a proxy measure of the other. The study analyzed the patient's perceptions of overall quality rather than satisfaction and its association with patient loyalty. Patient loyalty is measured in terms of both intentions to repatronise the hospital and feeling towards the hospital services. Shih-Wang Wu (March 2010) studied the service gaps in hospital between physicians and their patients. The physicians are service providers and patients are their customers usually customers expect more and are always dissatisfied. The study was conducted to identify the gap, improvise the service quality and see that customers were satisfied. The result of the study was that the physicians really care about patient's expectations, the public are more knowledgeable and hence their expectation for the service is also higher. The physicians should be rewarded for their service quality. The physicians naturally care for patients so that old patients shall be well kept and new patients shall be solicited.

C Padmanaba Siva Kumar and P.T Srinivasan (2010) aimed to address both practitioners and academics to understand that service quality and behavioral outcomes of consumers are linked. The behavioral outcomes of consumers include satisfaction, repatronage intention, and positive word- of-mouth. The authors investigated what dimensions of service quality affect hospital consumer's satisfaction, their loyalty, their indulgence is positive word-of-mouth communication in a specific service industry, hospital.

C. Boshoff and B. Gray (2004) investigated whether superior service quality and superior transaction specific customer satisfaction will enhance loyalty (as measured by purchasing intentions) among patients in the private health care industry. The research design allowed an assessment of the relative impact of individual dimensions of service quality and transaction-specific customer satisfaction on two dependent variables, biz loyalty (as measured by intentions to repurchase) and customer satisfaction, the latter measured as 'overall' or cumulative satisfaction. The results revealed that the service quality dimensions Empathy of nursing staff and Assurance impact positively on both Loyalty and Cumulative satisfaction. The service quality dimensions Empathy of nursing staff, Assurance and Tangibles impact positively on Loyalty. Patients are also more likely to return to a hospital (loyalty) if they perceive the fees is fair, reasonable and the service has good value for the money .

Stephen O Corner, Richard Shew Chuk examined the patient satisfaction and intention to return. Satisfaction is concerned with the broad overall positive emotional state a patient has from his or her last hospital visit. The hypothetical model was developed to test the hypothesis surrounding the issue of service quality in the health care environment. The research results gave a clear picture of consumer perception of service quality and the relationship of those perceptions to patient satisfaction and future intention to return.

Based on the review of previous literature from both service quality domain and health care sector, it is understood that, in the Indian scenario especially using the hospital service quality instrument, very little research has been done. Though some studies are attempted, using rigorous

statistical techniques' like structural equation modeling is seldom. So this study is attempted to measure the relation between dimension of hospital service quality and customer loyalty using techniques like SEM which is taking care of both measurement and structural model.

Objective of this research :

- .Evaluating the dimension and their concerned items on construct of Service quality in health care sector
- To know the role of Price as moderator between Hospital service quality between customer loyalty

Research Hypothesis

H1: HSQ dimensions (Reliability, Responsiveness, Assurance, Empathy and Tangibility) are positively related with customer Loyalty

H2: HSQ dimensions (Reliability, Responsiveness, Assurance, Empathy and Tangibility) are highly related with customer Loyalty when customers are less price sensitive and vice versa.

Research Methodology

This study used Quantitative research approach, which has embedded paradigm, has positivism, used deductive method of logic in order to test the theory which is largely based on the previous literature work. Survey research strategy is employed; Structured Questionnaire is used to collect the data from both single and multi specialty hospital in Bangalore, India. The Data was collected at the hospital which consisted of minimum 100 beds. Patients who have recently undergone treatment and who stay for minimum 1 week in hospitals are treated as unit of analysis. Totally, 292 filled samples are used for the data analysis. Sample units are derived with the help of convenient sampling method. Each patient is interviewed by trained data collection team members; interview went on for 35 to 45 minutes. In order to differentiate the customers as high and less price sensitive customers, the variables 'price' justified is split into two, based on the median score of total sample. 83 respondents were taken for both high and less price sensitive customers.

Study Measures

Based on the previous literature from the service quality domain, health care, patient's satisfaction, the variables are identified. By and large, study used two measures at first,- Service Quality (Parusuraman, Zeithmal and Berry 2000); this measure contained both expected and perceived items of 22 each, totally 44 items. Secondly, customer loyalty which consisted of 4 items which included items like recommendation, present experience, future preference and price justification. All the items of the both the measures used 7 point rating scale, 1 is strongly disagree and 7 is strongly agree. Price sensitive is split into two category based on median score, category less than median treated as Price High sensitive and category more than median treated as Price Less sensitive. The medians are treated as missing cases.

Data Analysis

To prove the above said hypothesis, collected data are tested for theoretical model (refer diagram 1), all the measures are summarized by using descriptive statistics, to test the theoretical models, structural equation modeling (SEM) is used as per the guidelines of (Brown and Kline, 2005) SEM literature.

Sample composition is described in terms of frequency distribution which is shown in the table1. Out of 292 samples, 46.5% from

multi-speciality and 53.5% from single speciality hospitals, 68.84% of the hospitals are containing above 350 beds. Nearly 50.3% of treatments are surgical oriented. 59.25% of the respondents are more than 40 years, close to 69.1% have < 3 lakh as annual income, minimum 35.62% are graduates, nearly 54% of sample consisted of the Business men, Professionals & Government employees as their occupation.

Descriptive statistics - Measures such as service quality dimensions and Customer loyalty are summarized in the form of descriptive statistics which is shown in the table 2. All the measures showed that their standard deviation is less than one-third of the mean, skewness is close to zero and kurtosis is less than 3 which indicate that all the measures are distributed in normal and permissible level. It also showed the Cronbach alpha of each construct, all the construct gained more than .7 which is quite satisfactory and indicated the goodness of data. (Schumacker and Lomax, 2001). SEM tests the theoretical models using the scientific method of hypothesis testing to advance researcher understanding of the complex relationship amongst constructs. The goal of using the SEM analysis is to determine the extent to which the theoretical model is supported by the sample data.

SEM Results

On SEM application, three models are tested shown in the diagram from 1 to Diagram 3. Which showed the overall model, High price sensitive and Less price sensitive. First two models to test the first hypothesis and other two models to test hypothesis 2. Table 3 through table 5, showed the selected indices of all the three models. CMIN/DF is less than 2. It showed that the model and data are closely matching especially Model 2 is better when compared to Model 2. Model 1 proved the hypothesis 1; it showed that Dimensions of Hospital Service Quality is highly related with Customer loyalty. Further, the researcher tried to prove second hypothesis, the result showed, R square for Model 3 is .77 while compared with Model 2, that is, .142. Table 4 showed the estimates in all the model, CR value is > 1.96 for all the relation between dimensions of HSQ and Customer loyalty.

Findings and Discussions

The outcome of the study showed that there is an empirical support for the given theoretical model. Compared to the previous literature, most of the things are aligning with this study. For instance: the relationship between dimensions and construct is positive. The relation between HSQ and price justification item is negative. Reliability and Empathy are predominated dimensions which influences on customer loyalty. The R square or squared correlation ensured the statistical fit of the model. Patients with Price Less sensitive are highly related with Customer Loyalty when compared with Patients with Price High sensitive. Hence both hypothesis are proved, in similarity to what literature review also supported. However, the study has some limitation such as, authors did not attempt to challenge the existing assumptions of SERQUAL; they assumed that the assumptions are right and tested model based on that; other factors like social desirability and using of SEM application, based on data collected with the help of convenient sampling. So, the researcher can understand the role of price as moderating variable in between HSQ and customer loyalty.

Table 1 - Sample Composition

Hospital	Count	Percentage
Single speciality	156	53%
Multi speciality	136	47%
Total	292	100%
Age - Patients	**Count**	**Percentage**
Less than 40	119	41%
41-50	89	30%
51-60	61	21%
Above 60	23	8%
Total	292	100%
Occupation - Patients	**Count**	**Percentage**
Business	42	14%
Professional	42	14%
Academician	16	5%
Govt.Employee	30	10%
Others (Retired, House wives, Students etc)	162	55%
Total	292	100%

Kind of treatment	Count	Percentage
Out patient	55	19%
In-patient	84	29%
Surgical Treatment	147	50%
Postoperative(Follow-Up)	6	1%
Total	292	100%
Income - Patients	**Count**	**Percentage**
Less than 1 lakh	133	46%
1 to 3 lakh	69	24%
3 to 5 lakh	48	16%
Above 5 lakh	42	14%
Total	292	100%
Education - Patients	**Count**	**Percentage**
Under graduate	104	36%
Graduate	111	38%
Post graduate	29	10%
Others	48	16%

Table 2 – Descriptive statistics of Service Quality and Customer loyalty

Descriptive Statistics and Reliability test						
	Mean	**Std. Deviation**	**Skewness**	**Kurtosis**	**No of item in construct**	**Cronbach Alpha**
Reliability	5.83	0.49	-0.07	0.23	5	0.773
Responsiveness	5.76	0.43	-0.20	0.35	4	0.687
Assurance	5.93	0.46	-0.33	1.37	4	0.727
Empathy	5.71	0.47	-0.51	1.01	5	0.777
Tangibles	5.71	0.59	-0.48	2.06	4	0.722
Customer Loyalty	5.25	0.70	0.21	-0.28	4	0.802

Diagram 1 - Theoretical Model Overall model

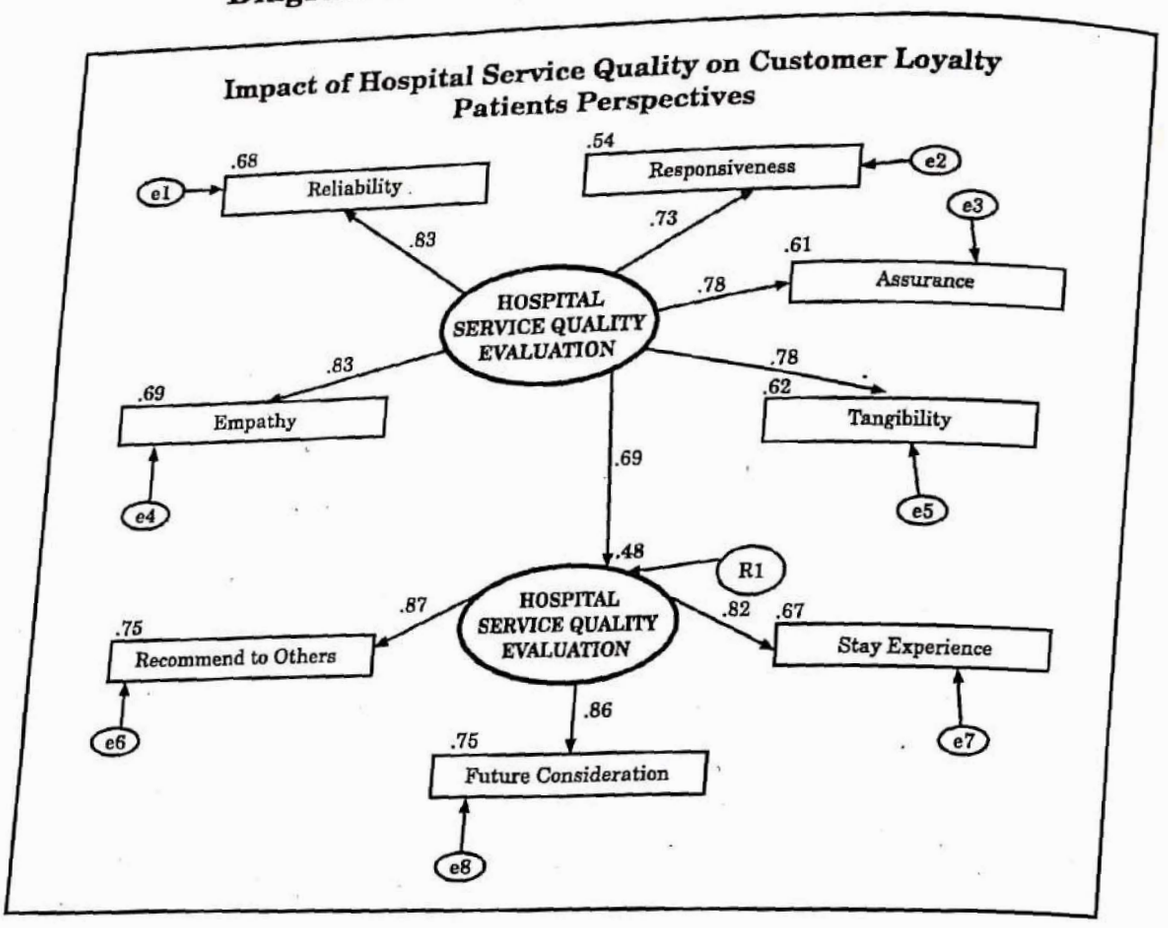


Diagram 2 – model 2 for Service quality constructs with Customer loyalty for Less price sensitive customers

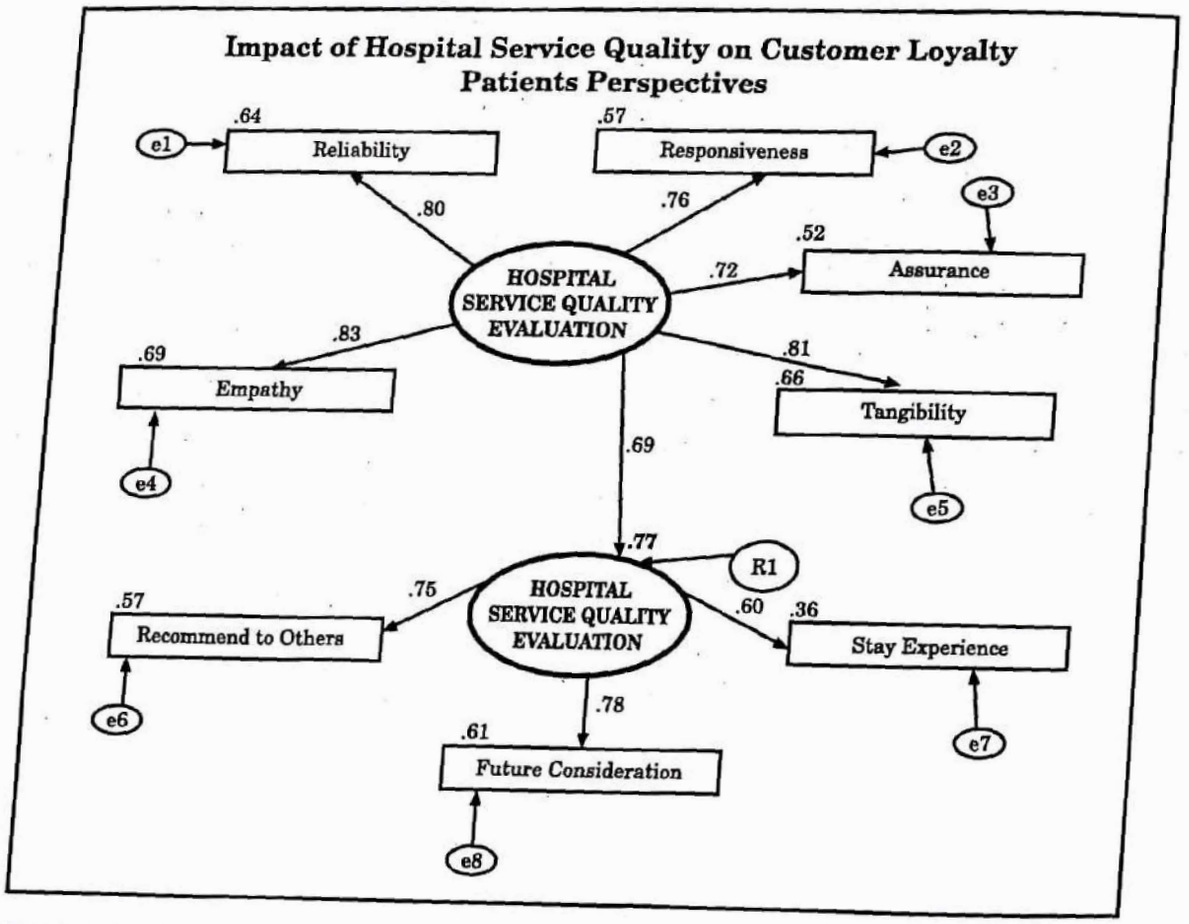


Diagram 3 – model 3 for Service quality constructs with Customer loyalty for High price sensitive customers

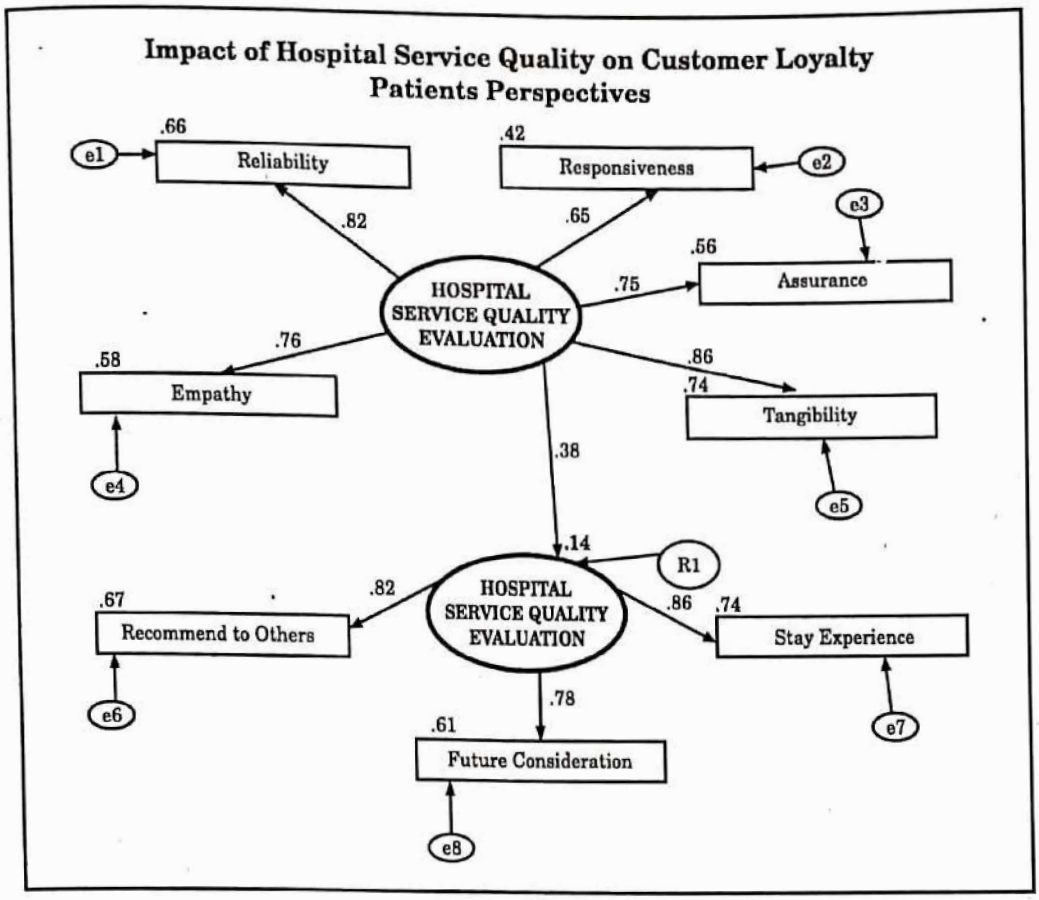


Table 3 : Selected Indices of all 3 models

Selected Indices	Overall model 1	High sensitive model 2	Less sensitive model 3	Threshold value
Samples	292	83	83	Min 125
CHSQ	62.401	5.726	194.441	Na
DF	26	2	139	Na
P	0	0.057	0.001	>.05
CMIN/DF	2.4	2.863	1.399	< 2.0
GFI	0.954	0.990	0.937	>=.96
TLI	0.966	0.978	0.964	>=.96
CFI	0.975	0.993	0.971	>=.97
RMR	0.022	0.023	0.045	<.09
RMSEA	0.069	0.080	0.037	<.06
Standardized Residual Covariance	< 1.96	< 1.96	< 1.96	< 1.96

Table 4: Comparison of Models - Estimates

	OVERALL				HIGH PRICE SENSITIVE				LESS PRICE SENSITIVE			
	EST	S.E.	C.R.	P	EST	S.E.	C.R.	P	EST	S.E.	C.R.	P
CL <- HSQ	1.289	0.116	11.09	***	0.704	0.235	2.996	0.003	1.033	0.16	6.31	***
F1 <- HSQ	1				1				1			
F2 <- HSQ	0.776	0.056	13.79	***	0.738	0.121	6.099	***	0.817	0.11	7.36	***
F4 <- HSQ	0.967	0.059	16.30	***	0.859	0.116	7.439	***	1.143	0.13	8.29	***
F3 <- HSQ	0.884	0.059	14.97	***	0.808	0.11	7.314	***	0.864	0.12	6.98	***
F5 <- HSQ	1.143	0.076	15.08	***	1.232	0.143	8.611	***	1.218	0.15	8.04	***
C1 <- CL	1				1				1			
C2 <- CL	1.055	0.063	16.77	***	1.127	0.143	7.885	***	1.059	0.21	5.05	***
C3 <- CL	0.982	0.054	18.22	***	0.937	0.126	7.429	***	1.088	0.16	6.56	***
C4 <- CL	0.33	0.064	5.153	***								

Table 5 - Comparison of Models - Standardized Regression weights and R square

	OVERALL		HIGH PRICE SENSITIVE		LESS PRICE SENSITIVE	
	Std Reg.	R Sqr	Std Reg.	R Sqr	Std Reg.	R Sqr
CL <- HSQ	0.686	**0.481**	0.377	**0.142**	0.88	**0.774**
F1 <- HSQ	0.827	0.684	0.815	0.664	0.799	0.638
F2 <- HSQ	0.734	0.539	0.648	0.42	0.756	0.571
F4 <- HSQ	0.83	0.608	0.76	0.563	0.83	0.525
F3 <- HSQ	0.78	0.689	0.75	0.578	0.725	0.689
F5 <- HSQ	0.784	0.615	0.858	0.736	0.81	0.656
C1 <- CL	0.874	0.763	0.82	0.673	0.753	0.566
C2 <- CL	0.813	0.661	0.86	0.74	0.597	0.357
C3 <- CL	0.866	0.749	0.784	0.615	0.782	0.611
C4 <- CL	0.309	0.096	NA	NA	NA	NA

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