

# **Customer Perceived Service Quality, Satisfaction and Customer Loyalty: An Empirical Test of Mediation in Private Hospitals.**

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## **Abstract**

The purpose of the study is to examine the impact of perceived service quality on customer satisfaction and customer loyalty, and find mediating role of customer satisfaction was also assessed between perceived service quality and customer loyalty. An integrated research model has been developed by combining the different factors from the existing literature. The validity of the model is tested by applying structural Equation modelling (SEM) approach to data collected from 370 customers including (in-patients & out-patients) in four private hospitals (more than 100 bedded). The reliability and validity of the dimensions are established through Confirmatory Factor Analysis (CFA) using SPSS-AMOS-20 version. The related hypothesis is tested by using SEM. The results indicated that customer satisfaction mediates the relationship between perceived service quality and customer loyalty, the impact of perceived service quality does not lead to customer loyalty without customer satisfaction in Indian private healthcare sector.

**Key words:** Confirmatory Factor Analysis, Structural Equation Modelling, Indian Healthcare, Mediation

## **1. Introduction**

Healthcare Services has become one of India's largest and fastestgrowing sectors in terms of high returns and also more employment provider. The industry comprising - hospitals, medical devices, clinical trials, outsourcing, medical insurance and medical equipment - is growing at a tremendous pace owing to its strengthening coverage, services and increasing expenditure by public as well private players. Indian healthcare industry looks positive owing to high growth rate in almost all its segments, whether its primary healthcare, secondary and tertiary healthcare, medical equipment, diagnostics, health insurance or medical tourism. The ever growing population, increasing government expenditure on health and growing per capita income will increase the size of this industry in the years to come. Per capita income is expected to increase at a Compound Annual Growth Rate (CAGR) of 5.7 per cent over 2012-18 (Indira Securities Report, 2014). Rising incomes mean a steady growth in the ability to access healthcare and related services. Moreover, changing demographics will also contribute to greater healthcare spending; this is likely to continue with the size of the elderly population set to rise from the current 96 million to about 168 million by 2026. However, growing health awareness and precautionary treatments coupled with improved diagnostics will result in decreasing hospitalisation. Indian healthcare delivery system is characterized by two major components public and private. The Government i.e. public healthcare system comprises of limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of Primary Healthcare Centres (PHCs) in rural areas. The private sector provides majority of secondary, tertiary and quaternary care institutions with a major concentration in metros, tier II and tier I cities. Large investments by private sector players are likely to contribute significantly to the development of India's hospital industry and the sector is poised to grow to \$100 billion by the year 2015 and further to \$280 billion by 2020 (Economic survey, 2014-2015). The healthcare sector is growing at a CAGR of 15 per cent and expected to touch \$158.2 billion by 2017 from about \$85.92 billion in 2013.

## **2. Theoretical Framework and Hypothesis**

Nowadays, many health care service providers accept to recognize that quality should be assessed for long time survival in the competitive market. Service quality is a set of user perceivable attributes of that which makes a service what it is. It is expressed in user-

understandable language and manifests itself as a number of parameters, all of which have either subjective or objective values. Measuring service quality also helps health care providers identify specific, and often unmet needs of customers, Therefore, perceived service quality in health care services is at the forefront of professional and managerial attention because it is considered as the means to achieve competitive advantage and long-term profitability (Brown and Swartz, 1989) as well as achieve the suitable health outcomes for consumers (Dagger and Sweeney, 2006).

Understanding perceived service quality, customer satisfaction and customer loyalty have been recognised as critical to developing service improvement dimensions. The inaugural quality assurance work of Donabedian (1980) identified the importance of patient satisfaction as well as providing much of the basis for research in the area of quality assurance in healthcare. In the healthcare sector, the importance of measuring patient satisfaction is well defined (Lin and Kelly, 1995) with patient satisfaction having been studied and measured widely as a stand-alone construct and as a component of outcome quality (Heidegger et al., 2006) and in particular in quality care assessment studies (Sofaer and Firminger, 2005). The work of Hulka et al. (1970) began the initial steps to measure patient satisfaction in the healthcare area with the development of the Satisfaction with Physician and Primary Care Scale. This was followed by Ware and Snyder (1975) with their research Patient Satisfaction Questionnaire, aimed at assisting with the planning, organization and evaluation of health service delivery programs. At the end of the 1970s, the customer satisfaction questionnaire was developed by Larsen et al., (1979) as an eight-item scale for assessing general patient satisfaction with healthcare services, and was superseded by their "Patient Satisfaction Scale.

In the past decade, increasing attention has been paid to quality of care as a means to enhance the effectiveness of health care systems in developing countries. In many developing countries, various actions have been taken to look into quality of primary health care, through either research and development (Brugha and Zwi 1998; Haddad et al. 1998; Hotchkiss 1998; Newman et al. 1998; Archibong 1999; Noorali et al, 1999) or full-blown quality assurance (Chase and Carr-Hill 1994).

In healthcare services, an important element that widely discussed in literature is service quality and satisfaction. Zeithaml (1988) defined quality as 'the consumer's judgement about a product or service overall excellence or superiority. Further, marketing literature agreed that service quality show to what extent service performance matches consumers' expectations (Gronroos 1984, 1994; Parasuraman et al. 1985, 1988). If service performance matches or exceeds consumers' expectations, they will have favourable assessments toward service quality (Parasuraman et al. 1988).

## **2.1.Important Variables**

### **2.1.1. Physical Environment:**

Refers to the sum total of physical facilities, infrastructure, hospital's functional logistics, medical apparatus, devices and instruments, appearance of medical staff etc. It includes the neatness, cleanliness and tranquillity of patient's room that is of utmost importance pertaining to the health condition perspective of patient. Since a patient has to stay till the day of release or recovery, to address his food and auxiliary service requirements, tangibles in form of choices of menu and other related service also add to the physical environment. To cater to the convenience level of patients, it requires the effective administration of water and electricity facilities. Even electricity should be available in cases of emergency. The patient's room should be well equipped with essential furniture in a proper condition. The existence of pathology labs, milk booths, food corners are also important. The performance of medical staff also has some role in defining the physical environment. Physical environment is a critical indicator of service quality standard of hospitals.

### **2.1.2. Efficiency:**

Hospital efficiency is an important dimension for health services evaluation and suffers the influence of different non-discretionary variables, not necessarily under the control of the hospital manager. The term efficiency, when used in a healthcare context, has two meanings. Both are based on the relationship between resource inputs and care outputs. The Institute of Medicine (2001, 6) defines efficiency as "avoiding waste." A more traditional economic definition is maximizing possible outputs from a set of resource inputs. These two approaches look similar, but there is a subtle difference between them.

### **2.1.3. Timeliness:**

Refer to the time-bound nature of emergency health care services. The nature of treatment varies from disease to disease. Certain health ailments require quicker treatment or emergency services or they land with a tragic end. So, the doctors and hospital personnel should be always at the toes in providing the right services in the right time. It basically emphasizes on punctuality, ever-readiness and the attitude of maintaining/sticking to a defined work schedule. Each medical staff should understand his duties, responsibilities keeping time-boundedness at the core.

#### **2.1.4. Transparency:**

There should be a culture of practising transparency in the hospital environment. This comes when every entity involved has such ethical orientation and values which channelize him/her to elicit clean behaviour. Transparency is solicited whether it is the case of patient registration, visits, cash handling, record-keeping, billing, documentation, reports, or other vital issues of hospitals. There should be no rooms left for ambiguity, chaos or confusion or any such controversy that violates the ethical norms of the hospitals. Doctors and staff should act honestly and in a trustworthy manner. There should be no embezzlement of cash, no misconception or miscommunication among fellow groups and there should be the practise of reporting to the authority with authentic information.

#### **2.1.5. Affordability:**

The hospitals, in general, should charge fees which can be afforded by the customers. Health issues should not remain unaddressed only for the monetary reason. Service is priceless, so there should not be any price discrimination or bargaining with customers. In a country like India, hospitals can preferably charge a moderate price looking at the per capita income or living standard of people of a particular region or territory. Affordability criterion should be handled with a proper outlook as disease doesn't discriminate between rich and poor. The services can't be categorised for different status of patients. It is necessary to charge an economic price, attractive for all customers.

#### **2.1.6. Communication:**

Refers to keeping the customers well-informed and acknowledged in the language and wavelength of their understanding and listen to their problems in an observant and effective manner. It includes the counselling by doctors, the consoling statements of nurses or other staff, the reciprocal response involved in the treatment mechanism. If the technical aspect is concerned, communication mediated by Information Technology, computerised registration,

record-keeping, billing etc. If there is lack of proper communication among the three entities, say doctor, medical staff and the patient, the healthcare objective is thwarted. The doctors should make an attempt to understand the patient's problem or the cause of his/her disease and the patient should be able to clearly spell out his/her problem/disease. This is possible through a two-sided effective communication. Communication can be through oral or written, say doctors prescribing orally or communicating the patients through medical reports or even suggestive verbal guidance by nurses. The patients are required to communicate properly for availing the right treatment (as in some cases they either are sceptical, fearful or reluctant in describing their ailments. The clarity in advice, recommendation and explanation can help securing better treatment. So, proper channel and attitude towards a winning communication should prevail without any fail.

#### **2.1.7. Customer Satisfaction:**

Customer satisfaction has become most popular topic in the healthcare from last two decades. Various researches had been defined the satisfaction construct. Customers will be satisfied if the overall performance of the service/product come across or reach expectations and vice versa (Kotler and Keller 2012). Woodruff (1993) stated that customer satisfaction tend to be treated as consumer attitudes in evaluating goods or services. Based on this definition Bitner and Zeithaml (2003) stated that satisfaction is 'customer evaluation of a product or service in terms of whether the product or service has met customer needs and expectations. Customer satisfaction is a high priority aspect of private healthcare service providers and also very significant achievement in the competitive environment.

#### **2.1.8. Customer Loyalty:**

Customer Loyalty in the services has long been considered a key outcome. Loyalty is generally expressed in terms of repurchase and willing to recommend to others (Bitner, 1990; Zeithaml et al 1996). Repurchase indicates whether or not a customer will maintain the relationship with his or her service provider (Zeithaml et al., 1996). Customer who willing to recommend a service firm to others is also likely to continue using the service provider for their own needs (Eisingerich and Bell, 2007).

### **3. Objectives of the Research**

- To extrapolate different facets of perceived service quality that leverages the customer satisfaction in Indian private hospitals.

- To examine the relationship between perceived service quality and customer loyalty while customer satisfaction acts as a mediator or not.

#### **4. Hypothesis formation:**

To assess the perceived service quality model and to measure its association with customer satisfaction and customer loyalty in Indian private hospital, we posit the following hypothesis:

**H1.** Perceived service quality has a positive impact on customer satisfaction.

**H2.** Perceived service quality has an indirect, positive impact on customer loyalty through customer satisfaction.

**H3.** Perceived service quality has a direct, positive impact on customer loyalty.

#### **5. Methods**

Data were collected from the customers of Indian private hospitals in Odisha. Patients were selected based on the criteria that they should have taken treatment from the Odisha private hospitals within the previous six months period when the study was conducted. The total of 425 questionnaires was distributed in 4 private hospitals. A total of 390 completed questionnaires were returned and 20 were dropped due to incomplete answers, 370(N) respondents were considered for the present study (87% response rate). The study constitutes of 54.5% of male and 55.5% of female respondents. Most of the respondents are aged between 18-45 years (42.7%) followed by 46-60 years (31.2%) more than 61 years (The responses were 26.1%). Most of the respondents were graduated and above (62%) uneducated respondents (15.6%) and remaining are secondary education (22.4). These surveys obtained through the use of a five-point Likert scale ranging from strongly agree (5) to strongly disagree (1). This study made use of convenience sampling method to gather customers' response from four private hospitals. The data was analysed through SPSS-20 version. The analysis process consisted of three stages. First the reliability of the variables checked for the internal consistency. Second, we performed an Exploratory factor analysis and confirmatory factor analysis (CFA) to support the issues of dimensionality and convergent and discriminant validity. Last, we used Structural Equation Models (SEMs) to test the validity of the proposed model and the hypotheses.



## 6. Results and Discussion

40-item scale was analysed using Exploratory Factor Analysis (EFA) over the 370 responses from four different private hospitals those hospitals capacity is more than 100 beds. This process results in eight factor model and Cronbach alpha are 0.881 for physical environment; 0.918 for efficiency; 0.834 for timeliness; 0.799 for transparency; 0.902 for affordability; 0.781 for communication; 0.812 for customer satisfaction and 0.922 for customer loyalty respectively, all the Cronbach alphas are more than 0.7 which can be acceptable (Nunnally, 1978) Table-I, which suggests a good internal consistency among items within each identified dimensions. Kaiser-Meyer-Olkin (KMO) value – 0.813 established the suitability of data for factor analysis.

**Table-1 Factor loadings for the perceived service quality dimensions**

Variables	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	Factor8
V1	0.816							
V2	0.803							
V4	0.719							
V5	0.714							
V6	0.698							
V8		0.855						
V11		0.729						
V12		0.707						
V13		0.649						
V14			0.881					
V15			0.818					
V16			0.734					
V18			0.698					
V19			0.654					
V21				0.831				
V22				0.749				
V23				0.730				
V24				0.681				
V26					0.723			
V27					0.719			
V28					0.645			
V30						0.791		
V31						0.776		
V32						0.715		
V33						0.681		
V34							0.823	
V36							0.784	
V37							0.755	

V38								0.810
V39								0.749
V40								0.701
E.V	4.052	3.821	3.121	2.717	2.103	1.889	1.211	1.188
C.V	23.778	33.504	40.133	46.370	51.514	55.882	59.627	63.297
$\alpha$	0.881	0.918	0.834	0.799	0.902	0.781	0.812	0.922

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

CFA generally help to assess unidimensionality. A CFA was conducted for each of variable to determine the measure construct, variables were assigned adeqsuately. Maximum likelihood estimation was employed to estimate the CFA model. The structural equation modelling program AMOS-20 version was used throughout the study to conduct the analysis. Empirical evidence in CFA is generally assessed using criteria such as the comparative fit index (CFI), the Root mean square residual (RMR), Goodness-of –fit index (GFI), Adjusted Goodness-of-fit index (AGFI). Table-IIIcomprises the results of the tests. CFI values close to 1 are generally accepted as being indications of well-fitting models (Raykov&Marcoulides, 2000). CFI value more than 0.90 indicates an acceptable fit to the data (Bentler, 1992). In our model CFI values ranging from 0.931-0.967, these values suggest very good model fits for private healthcare sector. For analysing Convergent validity Bentler-Bonett Normed Fit Index (NFI) obtained from CFA can be used to assess. NFI values of 0.90 or more indicate that adequate model fit (Bentler, 1995). The Goodness of fit index, tells what proportion of the variance in tha sample variance-covariance matrix the model accounts. GFI should be more than 0.90 (Jorskog, 1973) for good model. Adjusted goodness of fit index (AGFI) in which the values are adjusted for the number of parameter in the model.

**Table-II: Confirmatory Factor Analysis for Perceived service quality**

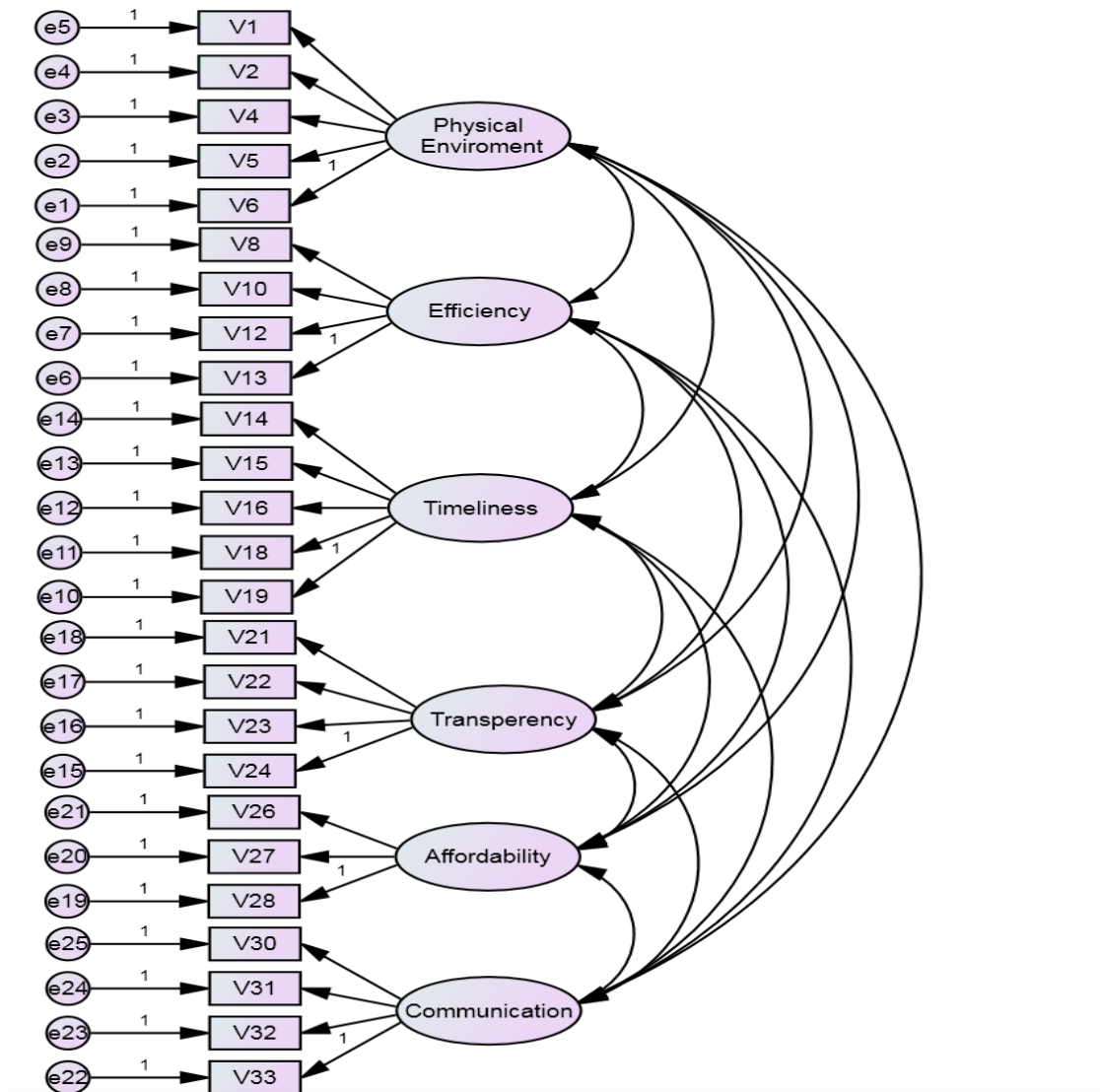
<b>Construct reliability</b>	<b>Standardised Loadings</b>	<b>t-statistics</b>	<b>Composite</b>
Physical Environment		0.76	
V1	0.86	10.16*	
V2	0.83	9.89*	
V4	0.79	10.92*	
V5	0.74	8.72*	
V6	0.70	8.99*	
Efficiency			0.83
V8	0.85	6.58*	

V10	0.79	7.12*	
V12	0.79	7.87*	
V13	0.64	8.15*	
Timeliness			0.71
V14	0.88	6.15*	
V15	0.81	6.77*	
V16	0.77	7.02*	
V18	0.69	7.17*	
V19	0.66	5.29*	
Transparency			0.86
V21	0.81	8.51*	
V22	0.75	8.11*	
V23	0.70	7.72*	
V24	0.68	8.92*	
Affordability			0.77
V26	0.77	10.42*	
V27	0.71	10.21*	
V28	0.65	10.15*	
Communication			0.81
V30	0.79	9.17*	
V31	0.76	8.28*	
V32	0.71	8.14*	
V33	0.68	9.21*	

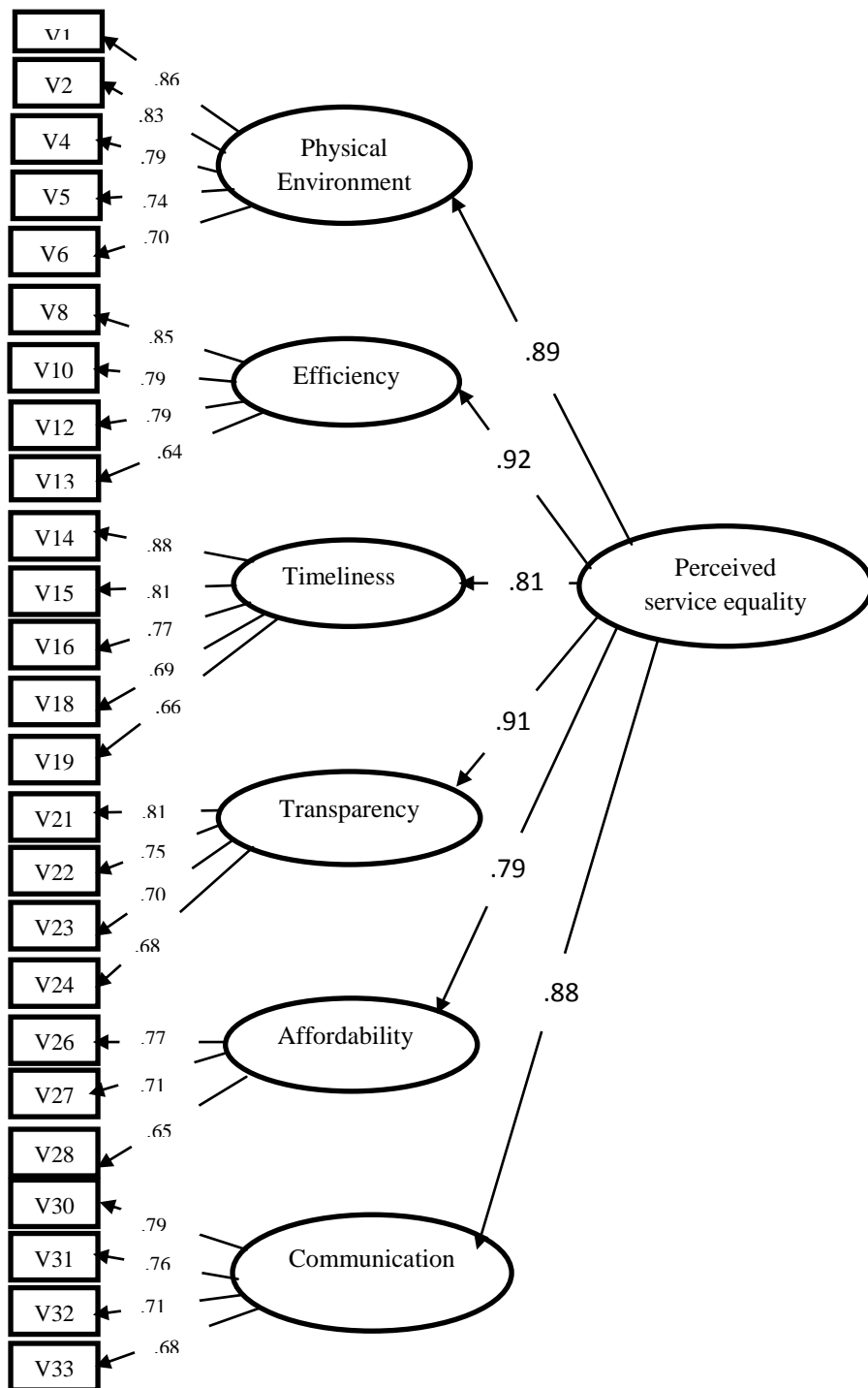
\*indicates significance at  $p < 0.01$  level

### 6.1. Model Fit Assessment

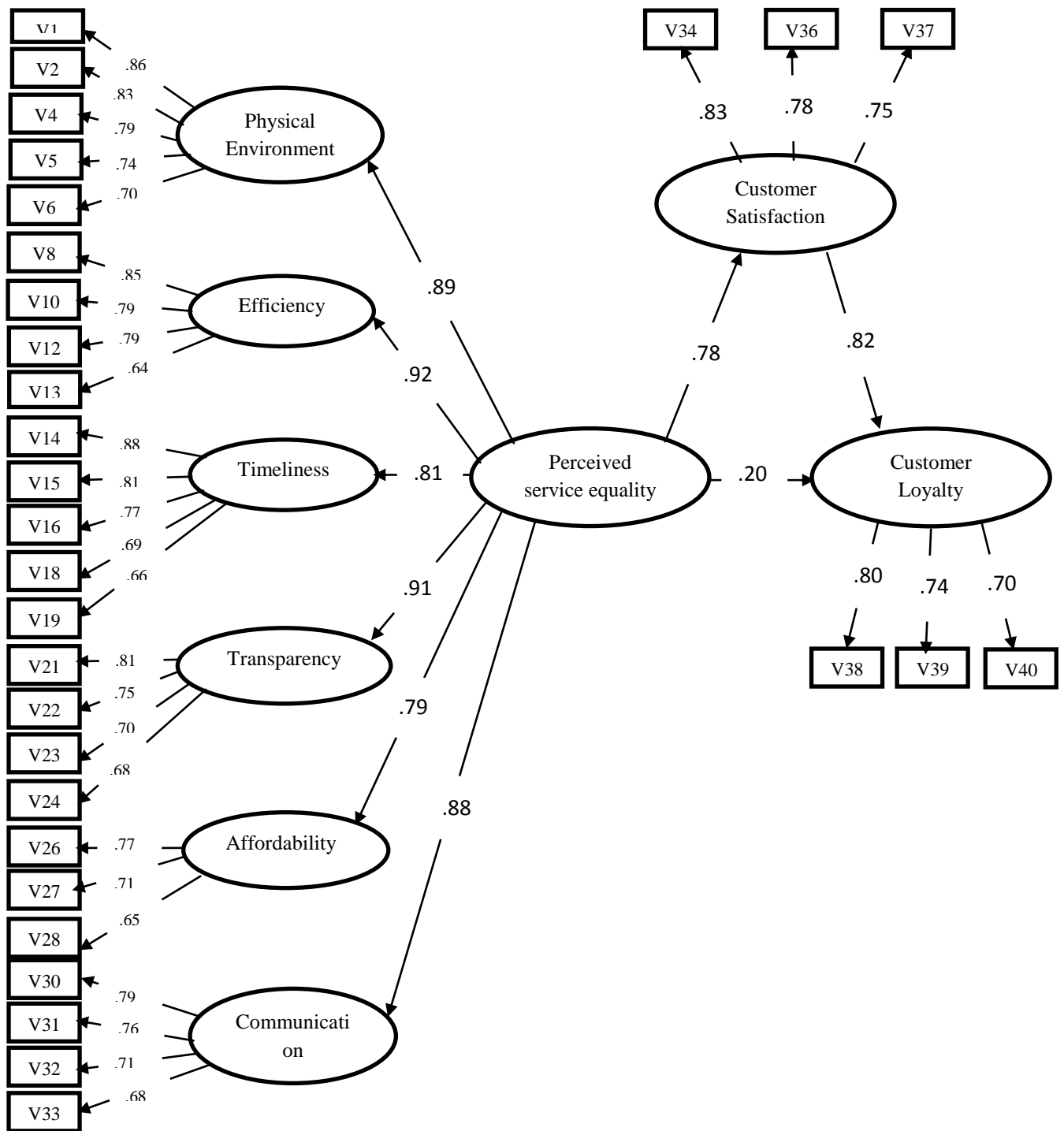
Measurement model-I for perceived service quality confirms an acceptable model fit of data with  $\lambda/df=2.81$ , AGFI=0.891, CFI=0.967, NFI=0.915, NNFI=0.916, RMSR=0.046 and RMSEA=0.073 these values indicates the unidimensionality of factor. Measurement model-II for second order confirmatory factor analysis confirms an acceptable model fit of data with  $\lambda/df=2.88$ , AGFI=0.901, CFI=0.931, NFI=0.908, NNFI=0.928, RMSR=0.041 and RMSEA=0.072 these values indicates that CFA fits well. Measurement model-III for structural equation modelling analysis confirms an acceptable model fit of data with  $\lambda/df=2.92$ , AGFI=0.899, CFI=0.939, NFI=0.940, NNFI=0.921, RMSR=0.049 and RMSEA=0.071 these values indicates that model fits perfect.



**Figure-1 :Measurement Model - I**



**Figure-2: Second order confirmatory factor analysis (Model-II)**



**Figure-3:** standardised Model with path Coefficients

**Table-III: Comparative fit indices among Model-I, Model-II and Model-III**

	$\chi^2/df$	RMSEA	RMSR	AGFI	CFI	NFI	NNFI
Model I	2.81	0.073	0.046	0.891	0.967	0.915	0.916
Model II	2.88	0.072	0.041	0.901	0.931	0.908	0.928
Model III	2.92	0.071	0.049	0.899	0.939	0.940	0.921

**Table-IV: Testing of Hypotheses**

Hypotheses	Relationship	Path Coefficient	P value	Results
H1	Perceived Service Quality→Customer Satisfaction	0.78	***	Accepted
H2	Perceived Service Quality→Customer Loyalty	0.20	***	unaccepted
H3	Customer Satisfaction →Customer Loyalty	0.82	***	Accepted

\*indicates significance at  $p < 0.01$  level

### **7. Customer satisfaction mediates the quality–loyalty relationship:**

Perceived quality is considered the antecedent of satisfaction and customer loyalty. Therefore, customer loyalty stems primarily from perceived service quality. Perceived service quality influences customer loyalty and customer satisfaction. Therefore, customer satisfaction partially mediates the quality–loyalty relationship (Ball, 2006; Boshoff&Gray2004). The process of achieving satisfaction has been described as follows. Before buying, consumers form expectations of a specific product or service. Then, consumption induces a perceived quality level that is influenced by the difference between actual quality perceptions and the expectations of quality (Oliver, 1980; 1997). If perceived quality is confirmed, then customersatisfaction was high. Intensity of customer loyalty is then influenced by the degree of customer satisfaction, and perceived service quality is considered to influence customer loyalty.

### **8. Managerial implications and Conclusion:**

The results shows that dimensions of perceived service quality have a strong impact on customer satisfaction and customer loyalty. Further, perceived service quality has no direct impact on the customer loyalty. It is also important to note that customer satisfaction convey the link between

perceive service quality dimensions and customer loyalty. Based on the results, hospital managers in the service area context could interpret these results as suggesting that they should take more concentration on perceived service quality dimensions because customers perceived them as significant to their customer loyalty to recommend others, to revisit, willing to repurchase. In order to improve customer satisfaction and increase their loyalty to the healthcare service provides, hospital management should analyse their staff performance not only in manner of their professional skills, but also their ability to effectively communicate with their customers during the treatment time. The implications of this research are highly relevant to the healthcare service providers. Result shows that customers evaluate perceived service quality at their level, dimension level (Physical environment; Efficiency; Timeliness; Transparency; Affordability; Communication; Customer satisfaction and Customer Loyalty). These results will help to service providers on how customers assess perceived service quality in private hospitals. Research model developed in this study offers service providers an understanding of how perceived service quality mediates customer loyalty through customer satisfaction. This research help to policy-makers about the strengths and weaknesses of the quality of private healthcare services, as perceived by customers, which can help define starting points to improve customer loyalty for better position in the competitive health market.

## 9. References

- Archibong, U. E. (1999), "Evaluating the impact of primary nursing practice on the quality of nursing care: a Nigerian study," *Journal of Advanced Nursing*, 29, 680-689.
- Ball D., Coelho P.S., Vilares M.J. (2006), "Services personalization and loyalty," *Journal of Services Markting*, 20, 391-403.
- Bentler, P.M. (1992), "On the fit of models to covariances and methodology to the Bulletin," *Psychological bulletin*.
- Bitner, M. J. (1990), "Evaluating service encounters: the effects of physical surroundings and employee responses," *The Journal of Marketing*, 69-82.
- Bentler, P. M. (1995), "*EQS structural equations program manua*,".Multivariate Software.



- Brugha, R., and Zwi, A. (1998), "Improving the quality of private sector delivery of public health services: challenges and strategies," *Health policy and planning*,13, 107-120.
- Brown, S. W., and Swartz, T. A. (1989). "A gap analysis of professional service quality," *The Journal of Marketing*, 92-98.
- Boshoff C, and Gray B. (2004), "The relationship between service quality, customer satisfaction and buying intentions in the private hospital industry," *South African Journal of Business and Management*, 35, 27–35.
- Chase, E., and Carr-Hill, R. (1994), "The dangers of managerial perversion: quality assurance in primary health care," *Health Policy and Planning*, 9, 267-278.
- Chou S.M., Chen T.F., Woodard B., and Yen MF (2005), "Using SERVQUAL to evaluate disconfirmation of nursing service in Taiwan," *Journal of Nursing Research*, 13, 75–83.
- Dagger, T. S., and Sweeney, J. C. (2006), "The effect of service evaluations on behavioural intentions and quality of life," *Journal of Service Research*, 9, 3-18.
- Donabedian, A. (1980), Explorations in quality assessment and monitoring.
- Grönroos, C. (1984), "A service quality model and its marketing implications", *European Journal of Marketing*, Vol. 18, 36-44.
- Grönroos, C. (1994), "From scientific management to service management: a management perspective for the age of service competition," *International Journal of Service Industry Management*, 5, 5-20.
- Eisingerich A.B., and Bell S.J. (2007), "Maintaining customer relationships in high credence services," *Journal of Services Marketing*, 21, 253–262.
- Economic Survey (2014-2015), "Ministry of Finance, Government of India," Chapter 09, pp, 131-146.
- Heidegger, C. P., Romand, J. A., Treggiari, M. M., and Pichard, C. (2007), "Is it now time to promote mixed enteral and parenteral nutrition for the critically ill patient?" *Intensive care medicine*, 33, 963-969.

Hotchkiss, F.H.C. (1998). "A rays-as-appendages model for the origin of pentamerism in echinoderms," *Paleobiology*, 24 200-214.

Hulka, B.S., Zyzanski, S.J., Cassel, J.c. and Thompson, S.J. (1970), "Scale for the measurement of attitudes toward physicians and primary medical care," *Medical Care*, 8; 429-436.

Indira Securities. (2014), "Indian healthcare industry looks positive:Indira Securities," accessed from: <[http://www.moneycontrol.com/news/brokerage-recos-sector-report/indian-healthcare-industry-looks-positiveindira-securities\\_1200578.html?utm\\_source=ref\\_article](http://www.moneycontrol.com/news/brokerage-recos-sector-report/indian-healthcare-industry-looks-positiveindira-securities_1200578.html?utm_source=ref_article)>

Institute of Medicine. (2001), "Supply Chain Services Professional's Role in Achieving the Institute of Medicine's Six Aims for Improvement," available at [http://www.ahrmm.org/ahrmm/news\\_and\\_issues/issues\\_and\\_initiatives/IOM6/](http://www.ahrmm.org/ahrmm/news_and_issues/issues_and_initiatives/IOM6/) (accessed 20March 2015).

Joreskog, K. G. (1973), "A general method for estimating a linear structural equation system," in A. Goldberger & O. Duncan, eds, 'Structural Equation Models in the Social Sciences', Seminar Press, New York, 85–112.

Kotler, P., and Keller, K. L. (2012). *Marketing Management* (14th ed.). England: Pearson.

Larsen, D.L., Attkisson, C.C., Hargreaves, W.A. and Nguyen, T.D. (1979), "Assessment of client/patient satisfaction: development of a general scale," *Evaluation and Program Planning*, 2, 197-207.

Lin, B., and Kelly, E. (1995), "Methodological issues in patient satisfaction surveys," *International Journal of Health Care Quality Assurance*, 8, 32-37.

Nunnally, J. C. (1978), *Psychometric theory* (2<sup>nd</sup> ed.), McGraw-Hill, New York.

Noorali R., LubyS., and Rahbar MH. (1999), "Does use of a government service depend on distance from the health facility?," *Health Policy and Planning*, 14: 191–7.

Oliver RL(1980), "A cognitive model of the antecedents and consequences of satisfaction decisions," *Journal of Marketing Research*, 17, 460–469.

Oliver R.L. (1997), *Satisfaction: A behavior perspective on the consumer*. New York: McGraw-Hill;

Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1985), "A conceptual model of service quality and its implications for future research," *The Journal of Marketing*, 41-50.

Parasuraman, A., Zeithaml V. A. and Berry L. (1988), "Servqual: A multiple-item scale for measuring consumer perceptions of service quality," *Journal of Retailing*, 64, 12-40.

Raykov, T., and Marcoulides, G. A. (2000), "A method for comparing completely standardized solutions in multiple groups," *Structural equation modeling*, 7, 292-308.

Sofaer, S., and Firminger, K. (2005), "Patient perceptions of the quality of healthservices," *Annual Reviews Public Health*, 26, 513-559.

Ware Jr, J. E., and Snyder, M. K. (1975), "Dimensions of patient attitudes regarding doctors and medical care services," *Medical care*, 669-682.

Woodruff, R. B. (1993), "Developing and applying consumer satisfaction research: Implications for future research," *Journal of Consumer Satisfaction, Dissatisfaction & Complaining Behavior*, 6, 1-11.

Zeithaml, V. A. (1988), "Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence," *The Journal of marketing*, 2-22.

Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The Behavioural Consequences of Service Quality," *Journal of Marketing*, 60, 31-46.

Zeithaml, V. A., and Bitner, MJ (2003), *Services Marketing: Integrating Customer Focus Across the Firm*.

Zeithaml, V., and Bitner, M. J. (2003), *Services marketing (3rd ed.)*. Boston, MA: McGraw-Hill. Irwin.

## 10. Appendix

The instrument to analyse perceived service quality asked respondents about their agreeableness with respect to 40 variables for perceived service quality, each variable on a five point Likert scale (1= strongly disagree 3= neutral and 5=strongly agree). The details of the variables are given below.

S.no	Dimension	1	2	3	4	5
	<b>Physical Environment</b>					
1	Hospital is well-equipped with all necessary medical equipment	1	2	3	4	5
2	Physical facilities are visually appealing	1	2	3	4	5
3	Hospital staff are neat in appearance	1	2	3	4	5
4	Materials related to patient services are visually appealing	1	2	3	4	5
5	Hospital provides holistic environment for the patients	1	2	3	4	5
6	Hospital canteen provides hygienic food for patients	1	2	3	4	5
7	Hospital wards, cabins, corridors and toilets/washrooms are regularly cleaned	1	2	3	4	5
	<b>Efficiency</b>					
8	Hospital is having competent and experienced doctors and staff members	1	2	3	4	5
9	Hospital members are actively carrying the medical services assigned to them	1	2	3	4	5
10	Hospital management promptly administers the activities starting from admission to discharge	1	2	3	4	5
11	Staff members are available all time clearing customer questions	1	2	3	4	5
12	Complaints about the hospital were handled well by administration	1	2	3	4	5
13	Doctors and staff of the hospital do their duty with efficiently till last hours	1	2	3	4	5
	<b>Timeliness</b>					
14	Hospital personnel respond immediately	1	2	3	4	5
15	Doctors are readily available in their cabins	1	2	3	4	5
16	Treatment starts immediately after admission	1	2	3	4	5
17	After recovery, patients are discharged sooner without extra imposition for staying	1	2	3	4	5
18	Hospital is always ready with providing emergency services	1	2	3	4	5
19	Patients waiting time is not more than 1 hour	1	2	3	4	5
	<b>Transparency</b>					
20	Hospital maintain transparency billing system	1	2	3	4	5
21	Doctors and staff are not asking money extra money from customers	1	2	3	4	5
22	Hospital provides all bill about treatment	1	2	3	4	5
23	Medical records can understand by the outside hospital staff	1	2	3	4	5
24	Patients feel safe when dealing with doctors and staff	1	2	3	4	5
	<b>Affordability</b>					
25	Hospital provides good service at a reasonable cost without compromising on quality	1	2	3	4	5

<b>26</b>	Hospital staff do not charge extra money for services provided	1	2	3	4	5
<b>27</b>	There is no discriminatory pricing stemming out from the status of patients	1	2	3	4	5
<b>28</b>	Hospital is not charging for leisure activities form patients (e.g. television, newspaper etc.)	1	2	3	4	5
<b>29</b>	Hospital is not charging parking fee from patients and accompanying persons	1	2	3	4	5
<b>Communication</b>						
<b>30</b>	Communicating with doctors and staffs are easy	1	2	3	4	5
<b>31</b>	Tests are adequately explained	1	2	3	4	5
<b>32</b>	Doctors and staff are willing to listen and answering questions	1	2	3	4	5
<b>33</b>	Hospital personnel explain the discharge process to the patient and family members	1	2	3	4	5
<b>Customer Satisfaction</b>						
<b>34</b>	Preference of treatment in this hospital is a wise decision	1	2	3	4	5
<b>35</b>	My experiance at this hospital is good	1	2	3	4	5
<b>36</b>	Overall satisfaction of the hospital is high	1	2	3	4	5
<b>37</b>	Doctors and staff of the hospital treated me with dignity and respect	1	2	3	4	5
<b>Customer Loyalty</b>						
<b>38</b>	Will recommend this hospital to others who seek my advice	1	2	3	4	5
<b>39</b>	Will consider this hospital my first choice to get health services in future	1	2	3	4	5
<b>40</b>	Will consider this hospital even if prices increased somewhat	1	2	3	4	5