

# “A PROPOSED MODEL SHOWING A DIRECT RELATIONSHIP BETWEEN THE PERCEPTION AND CUSTOMER SATISFACTION AND MEDIATING RELATIONSHIP BETWEEN THE PERCEPTION AND CUSTOMER SATISFACTION THROUGH SERVICE DELIVERY”

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## ABSTRACT

*The quality of the services has become a benchmark for the hospital-like industry, where everyone expects a good service to be provided by the hospitals. The quality of services is becoming one of the important parameters as far as the healthcare industry is concerned. The patients and their attendants are comparing and evaluating the industry. The quality of services is becoming the differentiating factor among the corporate and private hospital sectors. With the advancement in technology and quality accreditation, the competition of providing quality and affordable healthcare has been the target or goal of an organization. Quality of the services has always been a matter of discussion when we talk about the services being offered at public and private hospitals. Over the past decade or so, the quality of services of the public domain has improved with more advancement of technology, quality accreditations, sops, and policy for patient care. This paper discusses the model which shows a direct relationship between perception and customer satisfaction and the mediating relationship between perception and customer satisfaction through mediating variable service delivery. The model has been proved statistically and the CFA results show the model is within acceptable limits.*

**Keywords:** Quality, Perception, Delivery of Services, Patient Satisfaction.

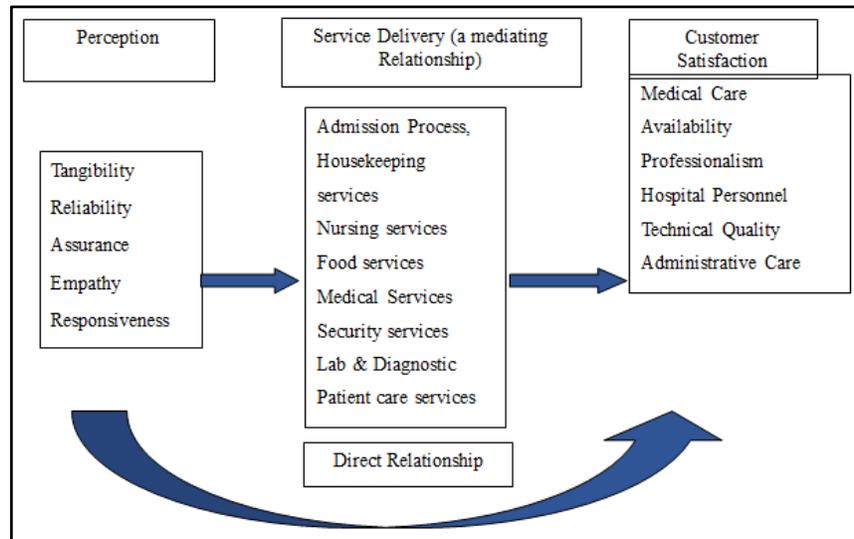
## INTRODUCTION

In today's world, the quality of services of any industry is of utmost importance. It is directly related to the growth, profitability, and revenue generation of any service industry. Good quality means good business and good word-of-mouth marketing. Marketing experts pay much more emphasis on the quality of services because they are aware, that if the service quality is better, people will prefer that service sector, and in turn, it will promote the brand of an organization. The establishment of genuine confidence lies in consumer loyalty, for which benefits quality is key information. Profoundly fulfilled or even delighted respondents of the hospital will probably get to be faithful witnesses of an organization, and solidify their purchasing, and information Amjeriya & Malviya (2012). Disappointment interesting pushes patients away and is a key variable in exchanging conduct. The world has changed from an industrial world to a service-oriented commercial world in the past two decades. The focus of an organization has

changed from profitability to profitable growth. The hospital services in particular are extremely resource-intensive, hence increasing the operational efficiency of technology and human resources yields more profitability.

**Proposed Model**

As per previous studies and literature on service quality particularly in the healthcare industry, the researcher has pointed out a few research gaps. Based on those gaps a researcher has formulated the conceptual model Figure1.



Note: All the parameters included in this model have been taken from previous literature and studies done on service quality.

**FIGURE 1  
PROPOSED CONCEPTUAL MODEL**

The researcher’s proposed conceptual framework shows a direct relationship between perception and customer satisfaction and mediating relationships between perception and customer satisfaction utilizing a mediator service delivery construct.

**LITERATURE REVIEW**

We come to know various phenomena and factors influencing through detailed literature review In the following lines, a brief review of studies in the field of the healthcare industry and service quality provided is been mentioned.

Various researchers have done their studies on the service quality of the Hospitals in India and abroad also. Jabnoun and Chaker (2003) developed and tested a modified SERVQUAL model for comparison between services offered to the inpatients in UAE. Dimensions of inpatient service quality were found and the reliability of these dimensions was also checked. It revealed that all five factors were reliable. And the regression model indicated the maximum overall service quality. A significant difference resulted while comparing. It showed that private hospitals should have a great emphasis while forming patient-oriented strategies to compete with government-funded hospitals. The results and implications highlighted the managers of the healthcare industry to understand the areas they need to work upon. A Taiwan study conducted by Chen & Cheng

(2010), proposed the use of a service quality model having two dimensions of interpersonal quality and competence. Vashist & Jain (2013), conducted a thorough analysis of the Indian Healthcare industry and said that there has been a paradigm shift in Indian healthcare over the past decade. The liberalization, globalization, and improving economy have led to changes in consumer buying behavior. Subedi and Uprety (2014), found that feedback on patient's experiences while encountering medical and support services in hospitals is very important as the patients who are satisfied with service quality will create a better image of hospitals among their peers and community which may help in more inflow of new patients to the hospital, Ahmed & Fatima (2014), did a study among 3 public and 3 private hospitals of Hyderabad (Andhra Pradesh). Responses were recorded from both the patients and the general public. Results indicated that SQ was better in privately managed hospitals, as they were more customer-oriented in comparison to government hospitals. Mrinali Tikare (2015), highlighted the importance of the healthcare industry among all the basic services for any country, as healthy human resources will only be able to uplift the economy of any country, the governments need to ensure the best possible quality of services in their respective countries.

## METHODOLOGY

This paper discusses the research model which shows a direct relationship between perception and customer satisfaction and a mediating relationship via service delivery between perception and customer satisfaction. In this model, the researcher has taken three variables i.e. perception, service delivery, and customer satisfaction. The parameters used to describe each variable have been taken from past literature and studies. The primary data has been used and the data has been collected from OPD patients ( Follow up patients which had 2nd or 3rd visits to the hospital), indoor patients, and the attendants ( who stayed for at least 3 days in the hospitals). The hospitals used for the study purposes were two public and two private hospitals which were multi-specialty hospitals in the Raipur city of Chhattisgarh.

### The Objective of the Study

1. To identify, measure and test the mediation of service delivery parameters between the perception and customer satisfaction.

### The Hypothesis of the Study

*H<sub>1</sub>: There would be no significant mediating effect of service delivery between the relationship of perception and customer satisfaction.*

### Target Population

The target population of the study is our customers who constitute the indoor patients, attendants, and OPD patients (Follow up patients) of both public and private hospitals in Raipur city. They are our respondents in our study Brach et al. (2015).

### Sample Area and Sample Size of the Study

The public hospitals selected for the study are:

1. Pt. J.N.M Medical College Associated Dr. Bhim Rao Ambedkar Memorial Hospital, Raipur.
2. All India Institute of Medical Sciences, AIIMS, Raipur.

The private hospitals selected for the study are:

1. Ramakrishna Care Hospital, Raipur.
2. NH MMI Narayana Multi-speciality Hospital, Raipur.

The study has been conducted in selected hospitals in Raipur city. The respondents are indoor patients, attendants, and outdoor patients from selected hospitals. About 500 samples have been selected for study amongst which 250 from the public and 250 from private hospitals have been taken to give equal weightage to both the public and private.

### **Type of Sampling**

The researcher has used simple random sampling in the study.

### **Research Instrument**

Data is collected from in-door patients, attendants, and outdoor patients of both groups of hospitals. The instrument used was a structured questionnaire Boulding et al. (1993). The questionnaire includes statements to measure service quality variables i.e. perception, service delivery, and customer satisfaction of both groups of hospitals. They have been approached and briefly described the parameters before filling out the questionnaire. The Likert scale has been used for study purposes Babakus & Mangold (1992).

### **Data Collection**

#### **Primary Data**

About 500 questionnaires were filled out by the respondents (the respondents were in-patients, OPD patients, and attendants) of selected public and private hospitals. Data collection was done by briefly describing the parameters of the study before filling out the questionnaire. The data was collected from, July 2019 to October 2019.

#### **Secondary Data**

Various thesis work, journals, and research papers were reviewed to get an in-depth knowledge of the service quality dimensions, perception, service delivery measures, and customer satisfaction concept Brogowicz et al. (1990). The total sample (N) is 500.

### **Data Analysis technique Used in the Study**

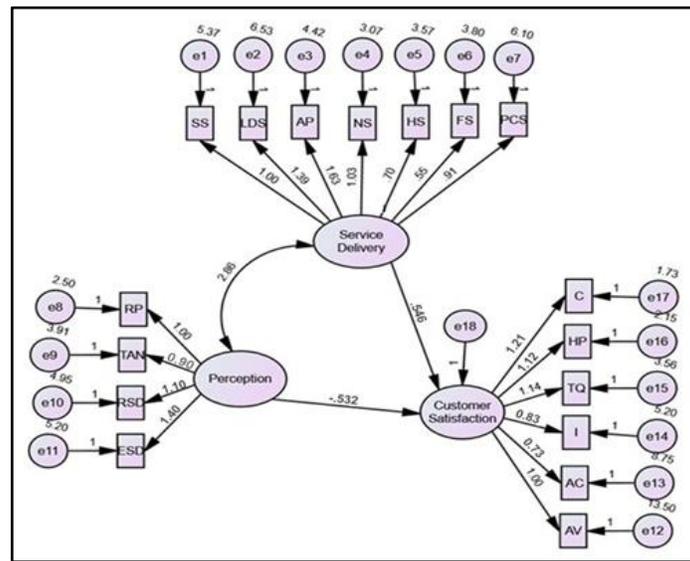
Analysis of the data i.e. the CFA and SEM have been done by using SPSS version 23 and AMOS version 23 software.

## **RESULTS & DISCUSSION**

### **Structure Equation Modelling**

This model examines the relative importance of perception and service delivery to overall customer satisfaction. Here, the direct impact of perception on customer satisfaction is negative and the value is -0.53, and the impact of perception through a mediating variable i.e. service delivery on customer satisfaction is positive and the value is 0.54 Grönroos (1984). The figure shows that 54% of the variance in customer satisfaction is explained by service delivery. A minimum of 55 % of the variance in all the factors is explained by perception, service delivery,

and custom satisfaction attributes Figure 2 and Tables 1-5.



**FIGURE 2**  
**THIS SEM MODEL EXAMINES THE RELATIVE IMPORTANCE OF PERCEPTION AND SERVICE DELIVERY TO OVERALL CUSTOMER SATISFACTION**

**Result Default model**

$X^2 = 3795.620; df = 492; p = 0.070$

Table 1 ESTIMATES AND SIGNIFICANCE VALUES OF THE STRUCTURAL MODEL CFA OUTPUT						
Regression Weights: (All data - Default model)						
			Estimate	S.E.	C.R.	P
Customer Satisfaction	<---	Perception	-0.532	0.389	-2.056	0.040
Customer Satisfaction	<---	Service Delivery	0.546	0.488	0.788	0.031
SS	<---	Service Delivery	1.000			
LDS	<---	Service Delivery	1.391	0.129	10.818	***
AP	<---	Service Delivery	1.632	0.136	11.995	***
NS	<---	Service Delivery	1.031	0.093	11.118	***
HS	<---	Service Delivery	0.700	0.078	9.028	***
FS	<---	Service Delivery	0.546	0.072	7.565	***
PCS	<---	Service Delivery	0.913	0.101	9.021	***
RP	<---	Perception	1.000			
TAN	<---	Perception	0.900	0.086	8.382	***
RSD	<---	Perception	1.100	0.111	11.655	***
ESD	<---	Perception	1.400	0.122	11.324	***
AV	<---	Customer Satisfaction				
AC	<---	Customer Satisfaction	0.732	0.080	23.745	***
I	<---	Customer Satisfaction	0.836	0.075	23.233	***
TQ	<---	Customer Satisfaction	1.144	0.041	27.687	***
HP	<---	Customer Satisfaction	1.120	0.134	25.682	***
C	<---	Customer Satisfaction	1.210	0.141	23.238	***

**Table 2**  
**COVARIANCE BETWEEN PERCEPTION AND SERVICE DELIVERY**

Covariances (Perception and Service Delivery)

			Estimate	S.E.	C.R.	P
Service Delivery	<-->	Perception	2.857	.288	9.908	***

**Table: 3**  
**CHI-SQUARE VALUE**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	120	3795.620	492	.070	7.715
Saturated model	612	.000	0		
Independence model	68	18243.369	544	.000	33.536

$X^2 = 3795.620$ ;  $df = 492$ ;  $p = 0.070$

**Table 4**  
**CFI AND TLI VALUES OF THE MODEL**

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.792	0.770	0.814	0.994	0.913
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

**Table 5**  
**MODEL FIT INDICES CUMULATIVE DATA**

GOF Index – Absolute measures	Actual values
Chi-square	3795.620
Degrees of freedom	492
Probability	0.070
CMIN/df	7.715
RMSEA	0.063
Increment fit measures	
NFI	0.792
CFI	0.913
TLI	0.994

The CMIN/df value is 7.715 Sohail (2003). The probability value is .070 which is above the minimum limit of .05, hence the model is accepted. RMSEA value is .063 which is below the minimum accepted value of .09 indicating that there is a very low level of unexplained variance in the overall model. NFI value is 0.792, CFI value is 0.913 these represent the model fits well.

**Research Model and SEM Results**

The model shows how perception through service delivery leads to overall customer satisfaction. The researcher has proved this model statistically and the model fit indices are within acceptable limits. SEM was run and it showed significant results, which has been illustrated.

In the research model, there is a co-variance between the perception and the delivery of services. The P-value is <0.05 which shows the covariance between the perception and the service delivery is statistically significant. Here, the delivery of services acts as a mediating factor. The

model illustrates that the direct effect of perception on customer satisfaction results in a negative impact on customer satisfaction. The perception and customer satisfaction through service delivery results in a positive impact on customer satisfaction. This means, if we remove the service delivery variable in the model for a moment, the value of the direct effect of perception towards customer satisfaction is negative. That means most of the patients or attendants have a satisfaction level that has a negative perception towards the hospital. But when these patients or the attendants visits the hospital and avail the services of the hospital using service delivery, the negative perception is changed into a positive perception. The value of perception to customer satisfaction through service delivery is positive (0.54) and the value of perception to customer satisfaction without mediating variables is negative (- 0.53).

According to model fit indices, the model is acceptable, if the values of the four major indices are within acceptable limits. These values are chi-square, TLI, CFI, RMSEA. The first important index about the acceptance of the model is that the values of the chi-square should be insignificant, here the value of chi-square is 3795.620, the P-value is .070 which is insignificant, hence the model is acceptable. The TLI index should be above 0.95 and it is around 0.99. The CFI value should be above 0.9, here the CFI value of the model is 0.913. The RMSEA value should be above 0.6 and, in our model, the RMSEA is 0.63.

### Statement for Defending the Hypothesis

The null hypotheses H01 were rejected and alternative hypotheses were accepted.

H01 With regards to H01, Structural Equation Modelling results show a significant mediating effect of service delivery between the perception and customer satisfaction.

### Limitations of the Study

1. This is a cross-sectional study that is limited to selected hospitals of Raipur city in Chhattisgarh state.
2. Due to time and cost factors, a limited number of respondents could be covered in the survey.
3. The researcher could collect the data only from 2nd and 3rd-time visitors of the hospital.( OPD Follow up patients)
4. Among the inpatients, trauma and casualty patients, paediatrics patients, and unconscious patients, psychiatric patients were excluded from the study.
5. The age group among the respondents for the study was between 20 to 70 years.
6. The present study covers only one of the components of the health care industry, i.e. Hospitals, other Components like pharmaceuticals; biotechnology, health insurance, and medical tourism were not included in the study.
7. It was difficult to find the patients and the attendants fit for purpose of the study and to make them co-operate in getting the questionnaire filled. Therefore, many respondents which could have been useful could not be approached.
8. This was non- longitudinal research.

### CONCLUSION

As the hospital services are critical and are intangible, the process of hospital services delivery decides the overall impression about the hospitals or the service provider. The study proposed a research model which showed that the perception through a mediating variable of service delivery has a positive impact on customer satisfaction. The model was tested statistically and its values were significant. The model fit indices were within acceptable limits. This model showed that customer satisfaction is achieved when the perceived services are being delivered using mediating variable i.e. service delivery.

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