

## **DETERMINATION OF SATISFACTION OF ELECTRICITY CUSTOMERS IN HARYANA**

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### **ABSTRACT**

Customer satisfaction is one of the major criteria for the electricity distribution companies to increase their benefits and reduce the non-technical and technical losses. The satisfaction of customers depend upon the company's services that how much they are capable of meeting the expectations of customers. The disconfirmation of customers' expectations from their perceptions results into customer dissatisfaction. The negative disconfirmation, particularly, has larger impact on customer satisfaction. The scenario of company's services is judged on ten different dimensions according to SERVQUAL model. Ten different dimensions are tangibility, empathy, responsiveness, reliability, communication, security, courtesy, credibility, competence and accessibility. This work has surveyed about the satisfaction of electricity customers having domestic connections in Sonapat district of state of Haryana, India. The survey findings have revealed that the customers are not satisfied with the services of the electricity distribution company.

**Keywords:** SERVQUAL model, customer satisfaction, expectancy-disconfirmation.

### **1. INTRODUCTION**

Electricity distribution sector is grappling with the issue of poor customer satisfaction due to its bad service quality (Singh et al., 2016). It can also be understood in other way that poor customer satisfaction is causing financial loss to them. Customer satisfaction and service quality have interdependent relationship (Bolton and Drew, 1991). In both ways, customer satisfaction has become a serious matter of concern for the electric utilities. In today's competitive world, it has gained more momentum to make the company stand in the fierce competition of the market. Though, the public sector has less competition, even then, customer satisfaction largely determines the profitability of the electric utility. Since, customers have become more aware about their rights of the services they are offered, raising the service quality has become the need of the hour for electric utilities to sustain in the market. Beside appropriate quantity of electricity

supply, now, customers also expect good quality of supply and other related services which are intangible.

Measurement of service quality of the electric utilities becomes important as the level of services offered to the customers is associated with the customer satisfaction (Gremler and Gwinner, 2000). Good service quality reflects the superiority/excellence (Taylor & Baker, 1994) which further brings the customer satisfaction. Customer Satisfaction is defined in many different ways in literature. Some authors define customer satisfaction as post choice evaluative judgement related to a particular service paid for. Customer satisfaction is the result of assessment made by the customer of upto what level the utility services fulfil their expectations (Bruhn, 2003). The most widely employed model for this assessment is expectancy-disconfirmation paradigm. Expectancy-disconfirmation paradigm depends on the customer expectations from the utility services and by how much the actual service disconfirms with the expectations (Oliver 1981). Positive disconfirmation, i.e., higher level of company performance than expected performance, results into customers' satisfaction and negative disconfirmation leads to customer dissatisfaction. Customers' perceptions of company's performance depend on the quality of the services delivered (Cronin and Taylor, 1992) and on the evaluation of overall experience with the company (Jones and Suh, 2000).

Expectancy-disconfirmation approach focuses on the difference between the customer expectations from company's services and actual performance of the company (Oliver, 1980). Actual performance of the company forms the customers' perceptions towards its services. Thus, the judgement of customer satisfaction using expectancy-disconfirmation paradigm is based on the gap between customer expectations and their perceptions towards company's services on different dimensions. A review of the relevant literature also indicates that service quality is closely tied to customer satisfaction (Wisniewski & Donnelly, 1996; Sureschander, Rajendran, & Nitecki, 2002). There has been many models proposed for the measurement of service quality, but the most reliable and exploited model is SERVQUAL model developed by Texas A & M University (TAMU) Professors Valarie A. Zeithaml, A. Parasuraman, and Leonard L. Berry in 1980s (Parasuraman et al., 1985; Parasuraman et al., 1988). SERVQUAL measures the customers' needs and company performance at ten different dimensions: *tangibility, reliability, responsiveness, competence, courtesy, credibility, security, accessibility, communication, empathy*.

All these dimensions of SERVQUAL model have been considered in this work for analysing the service quality of the electric utility. In this study, empirical study has been undertaken using the well-structured questionnaire based on SERVQUAL model. The model gives the gap which defines the disconfirmation/confirmation of customer expectations with the services they are

offered. Using the expectancy-disconfirmation paradigm, customer satisfaction is determined on the basis of confirmation-disconfirmation.

## **2. OBJECTIVES OF THE STUDY**

This study surveys about the expectations of the electricity customers from their electricity distribution company and about how much the company is able to fulfill their expectations. This paper comprises of following objectives:

1. To study the customers' expectations and perceptions towards the services offered by electricity distribution company.
2. To determine the customer satisfaction with the services offered by electricity distribution company.

## **3. RESEARCH HYPOTHESIS**

This study is aimed at the analysis of customer satisfaction with the distribution company's services. For this analysis, following hypotheses are considered here keeping in view all the dimensions of services:

$H_0^1$ : Customers are satisfied with tangibility of the electric utility.

$H_0^2$ : Customers are satisfied with empathy of the electric utility.

$H_0^3$ : Customers are satisfied with responsiveness of the electric utility.

$H_0^4$ : Customers are satisfied with reliability of the electric utility.

$H_0^5$ : Customers are satisfied with communication services of the electric utility.

$H_0^6$ : Customers are satisfied with security in services of the electric utility.

$H_0^7$ : Customers are satisfied with courtesy of the electric utility.

$H_0^8$ : Customers are satisfied with credibility of the electric utility.

$H_0^9$ : Customers are satisfied with competence of the electric utility.

$H_0^{10}$ : Customers are satisfied with accessibility of the electric utility.

$H_0^1$  to  $H_0^{10}$  denote the null hypotheses concerned with different dimensions of services of the electric utility. Expectancy-disconfirmation approach has been used for accepting/rejecting the hypotheses.

#### **4. RESEARCH METHODOLOGY**

This work covers the empirical analysis of the people's responses collected through sample survey in Sonapat district of Haryana State. In this study, stratified random sampling has been used for the selection of respondents. Total sample population for Sonapat district is taken as 55. Here, population means electricity connections. As sample population comprises electricity connections, 55 electricity customers were asked to fill the questionnaire from the district.

This study performs the sample survey using well-structured questionnaire instrument having three parts: demographic profile, expectation and perception. Last two parts of the questionnaire are framed on the basis of SERVQUAL model. Questionnaire is having ten dimensions of SERVQUAL model, i.e., tangibility, empathy, responsiveness, reliability, communication, security, courtesy, credibility, competence and accessibility. Both expectation and perception part is having five questions for each dimension. The responses are collected through 5-point Likert scale varying from 1 (highly disagree) to 5 (highly agree). Empirical analysis on collected data has been done in SPSS (version 20.0) software.

#### **5. DATA ANALYSIS**

##### **5.1 Demographic Analysis**

Demographic profile of customers like age, gender, education, income, category, type of employment has impact on the customer expectations and perceptions regarding the service quality of utility company in different manner. For example, highly educated customer will have high expectations from the utility company. Similar to education, all other demographic characteristics affect the customers' expectation and perception differently. Table 1 shows the demographic profile of respondents in terms of their age, gender, category, education, monthly income, locality and type of employment.

##### **5.2 Reliability Analysis**

The reliability of the survey instrument has been checked by calculating the Cronbach coefficient alpha (Cronbach, 1951). This coefficient refers to the internal reliability of the collected data of different dimensions. For the instrument and the collected data to be considered valid for survey, Cronbach alpha should have larger value than 0.70 (Nunally, 1978).

**Table 1: Demographic Profile of Respondents**

<b>Variable</b>	<b>Category</b>	<b>Frequency</b>	<b>Percent</b>
Age	18-30 years	14	25.45
	30-40 years	18	32.73
	40-50 years	13	23.67
	50-60 years	5	9.09
	Above 60 years	5	9.09
Gender	Male	51	92.73
	Female	4	7.27
Category	General	35	63.64
	OBC	15	27.27
	SC/ST	5	9.09
Education	Illiterate	3	5.45
	Matric	8	14.55
	Upto 10+2	13	23.64
	Graduate	17	30.91
	Post Graduate/ Above	11	20.00
	Others	3	5.45
Monthly Income	Upto Rs. 10000	14	25.45
	Rs. 10000-50000	36	65.45
	Rs. 50000-100000	5	9.09
	Above Rs. 100000	0	0.00
Locality	Rural	16	29.09
	Urban	39	70.91
Employment	Self-employed	20	36.36
	Government Job	19	34.55
	Private Service	9	16.36
	Unemployed	4	7.27
	NGO Worker	0	0.00
	Others	3	5.45

To perform the reliability analysis in this work, Cronbach alpha's value has been computed for all ten dimensions of SERVQUAL model in case of both customer expectations and perceptions. The reliability of all dimensions of expectations and perceptions is shown in Table

**Table 2: Reliability Analysis**

Dimensions	No. of Items	Cronbach's Alpha	
		Expectation	Perception
Tangibility	5	0.898	0.740
Empathy	5	0.713	0.701
Responsiveness	5	0.778	0.705
Reliability	5	0.775	0.796
Communication	5	0.782	0.758
Security	5	0.704	0.849
Courtesy	5	0.705	0.745
Credibility	5	0.707	0.788
Competence	5	0.716	0.710
Accessibility	5	0.834	0.742
Overall	50	0.897	0.921

2. As Table 2 shows that all dimensions of expectation and perception have value of alpha above than 0.70. Overall reliability coefficient in case of expectation and perception is also high. Thus, the designed instrument is considered valid here. Consequently, collected data is also reliable and can be further used for empirical analysis.

### 5.3 Descriptive statistics

Here, the mean of customers' expectations and perceptions towards each statement is computed in SPSS (version 20.0) software for descriptive analysis of the collected data. The mean value of the responses collected from respondents using SERVQUAL based questionnaire, is shown in Table 3. Almost all the statements of every dimension have mean value of expectation higher than 4 showing high expectations from the company with respect to every dimension. But the customers' perceptions are not that much high for every dimension. Company's services could not meet the customer expectations. Due to which, customer perceptions are becoming worse day-by-day. In other words, customer perceptions are higher than their expectations. These observations show that company's performance is not remarkably good with regard to different dimensions of SERVQUAL model. Table 4 shows the disconfirmation between mean values of expectations and perceptions on all ten dimensions of SERVQUAL model. Disconfirmation between customer expectations and perceptions shows that the customers are not satisfied with

the company's services. This shows that overall customers' expectations are very high as compared to their perceptions towards company's performance.

**Table 3: Descriptive Statistics of Expectation and Perception Values for SERVQUAL Dimensions**

Statements	Expectation	Perception
<b>Tangibility</b>		
Modern tools and technology	4.563	2.727
Well managed offices	4.636	2.763
Simply written forms (for new connections, load change etc.)	4.654	3.127
Proper maintenance of records (of electricity connection, bills and meter, etc.)	4.672	3.145
Well organized wires	4.545	2.600
<b>Empathy</b>		
Personal attention to the customers	4.600	2.745
Operating hours suitable to customer's needs	4.454	2.836
Subsidies in electricity bill	4.109	3.327
Motivation to use energy saving bulbs, fans and other products	4.582	3.400
Bill collection centers near to customer's residence	4.418	2.909
<b>Responsiveness</b>		
No long queues at bill collection centers	4.527	2.672
Quick response to customers' complaints	4.563	2.454
Helpdesk for enquiry	4.618	3.036
Information in advance for power cuts	4.509	2.527
Satisfactory service in the first visit	4.381	3.145
<b>Reliability</b>		
Reliable answers to customers' enquiries	4.491	2.745
Correct electricity bills	4.472	3.018

Full voltage all the time	4.472	2.636
24 hours supply	4.072	2.582
Correct meter reading	4.600	3.200
<b>Communication</b>		
Prior information about due date of bill	4.454	2.891
Toll-free numbers for enquiries	4.636	3.618
Communication with customers in simple language	4.491	3.763
Awareness programs	4.345	3.218
Notice before disconnection of meter.	4.527	3.654
<b>Security</b>		
Security in all financial transactions	4.418	3.272
ID proof with employees	4.4	2.472
Timely maintenance of transformers	4.382	2.454
Supply lines at large distance	4.254	2.382
Properly sealed electricity meters	4.436	3.00
<b>Courtesy</b>		
Respectful behavior with customers	4.472	3.127
No partiality with customers	4.363	3.382
Ramp for physically challenged customers	4.454	2.763
Support for physically challenged (deaf, dumb, blind) customers	4.491	2.818
New connection with less formalities	4.472	2.363
<b>Credibility</b>		
Repairing of equipments with no extra money	4.218	2.800
No long cut	4.436	2.545
Electricity bills at the time of meter reading	4.272	2.218



Secured toll free number/online facility to report against employees	4.182	2.182
Normal speed of electricity meter	4.400	2.727
<b>Competence</b>		
Monthly billing	4.145	3.073
Safety of customers after repairing and maintenance work	4.400	2.564
Electricity bill at least 7 days before due date	4.400	2.782
No delay in replacement of major equipments	4.327	2.200
Strict actions for theft complaints	4.400	2.727
<b>Accessibility</b>		
Availability of employees in any emergency conditions	4.454	2.728
Easy bill correction procedures	4.400	2.345
Online complaint registration	4.382	3.109
Online facility for new connection	4.491	2.854
Facility of easy bill payment	4.454	3.800

They do not get the services as expected from the company on all ten dimensions. Among all ten dimensions, there is minimum disconfirmation (-1.06) with regard to communication services. Thus, credibility is the weakest dimension of the company's services and communication is the strongest dimension.

**Table 4: Expectancy-Disconfirmation for determining customer satisfaction**

Dimensions	Average Expectation	Average Perception	Disconfirmation/ Confirmation	Customer Satisfaction
Tangibility	4.61	2.87	P<E Negative Disconfirmation	Dissatisfied
Empathy	4.43	3.04	P<E Negative Disconfirmation	Dissatisfied
Responsiveness	4.52	2.77	P<E Negative Disconfirmation	Dissatisfied
Reliability	4.42	2.84	P<E Negative Disconfirmation	Dissatisfied
Communication	4.49	3.43	P<E Negative Disconfirmation	Dissatisfied
Security	4.38	2.72	P<E Negative Disconfirmation	Dissatisfied
Courtesy	4.45	2.89	P<E Negative Disconfirmation	Dissatisfied
Credibility	4.30	2.49	P<E Negative Disconfirmation	Dissatisfied
Competence	4.33	2.67	P<E Negative Disconfirmation	Dissatisfied
Accessibility	4.44	2.88	P<E Negative Disconfirmation	Dissatisfied

### 5.4 Hypothesis Testing

For testing the hypotheses, expectancy-disconfirmation paradigm has been used in this work. According to disconfirmation theory, if the mean value of perceptions is in disconfirmation with the mean value of expectations, customer is dissatisfied. Customers are satisfied if and only if their expectations and perceptions are in confirmation or positive disconfirmation. In other words, perceptions should be equal or higher than expectations to satisfy the customers. Table 4 shows the average value of customer expectations and perceptions and the disconfirmation between expectations and perceptions for all ten dimensions of SERVQUAL model. The expectancy-disconfirmation paradigm rejects all the null hypotheses due to negative disconfirmation between perceptions and expectations.

## **6. CONCLUSION**

This study concludes that customers are not satisfied with the company's performance on all fronts of service quality (tangibility, empathy, reliability, responsiveness, communication, security, credibility, courtesy, accessibility and competence) of SERVQUAL model. There is large disconfirmation between customers' expectations and perceptions towards the company's services. In this work, customers' satisfaction is assessed using expectancy-disconfirmation paradigm. Using this approach, customers are found not satisfied with the company's performance. Findings of this work suggest that company should improve their services to increase the customer satisfaction and consequently their losses.

## **7. PRACTICAL IMPLICATIONS**

This study determines the customer satisfaction towards the services offered by the electricity distribution company UHBVN in Sonapat district of State of Haryana. The results show that there are no dimension on which customers are satisfied. The administration of the electricity distribution company can assess their service quality by analyzing the customer perceptions surveyed about in this work. With the limited resources, the company should prioritize their focus on the niche areas carved out by this study which are tangibility, reliability, responsiveness, security, accessibility, credibility, courtesy, and competence. This analysis facilitates the company to explore about the weakest and the strongest dimension and also gives the clear vision of estimates about how much the company is lagging on different dimensions. Thus, it would help in deciding the management strategies to improve their level of services and increase the customer satisfaction level which will indirectly increase their profitability also.

## **8. LIMITATIONS OF THE STUDY**

This study covers analysis of primary data collected from the customers of one distribution company, UHBVN. More comprehensive view can be taken by surveying all the districts served by UHBVN. This study can also be made to give more inclusive results if it is extended for other distribution companies so that performance of different distribution companies can be compared with respect to different dimensions.

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