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Analysis of Service Quality Gap of Mobile Phone Sector Customers in Virudhunagar District: Application of Chi-Square Test

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Abstract

The telecommunication sector, especially the mobile phone sector, in India is the second largest in the world by more number of users. Telecom industry is hugely influencing the growth prospect of India and the government of this country is also encouraging the augmentation of this industry. Major sectors of the Indian telecommunication industry are telephone; internet and television broadcast industry in the country. Telecommunication in India has greatly been supported by the INSAT system of the country, one of the largest domestic satellite systems in the world. India possesses a diversified communications system, which links all parts of the country by telephone, Internet, radio, television and satellite. Mobile is not a device of luxury to the people of India today, it is a necessity. Therefore, it has become very challenging but opportunistic for the operators of this industry to acquire and retain customers. Customers are the hearts of any industry. Telecommunication being a service oriented industry always puts priority to find ways of making customers happy and satisfied. Success of any service organization depends on the service quality factor. Sensing this importance, this study aim is to analyze the service quality gap of mobile phone sector customers in Virudhunagar district.

Keywords: Customers, Service Quality, Service Quality Gap Introduction

Now-a-days, the telecommunication sector is one of the most important service sectors of a country and delivery high quality service in this sector can lead to growth and long-term development of any country. [1] In India too, the telecommunication sector has revolutionized the way we communicate and share information, thereby helping over 900 million Indians stay connected. In the last ten years, the mobile revolution has truly changed the socio economic landscape of India and played a pivotal role in the growth and development of the economy. The Indian mobile telecommunication industry has witnessed significant rise in competition in recent years largely due to the deregulation policy of government and the advent of mobile telecommunication companies. [2]

Every organization strives for long term success. There are various factors that contribute to the success of organization. Organizations with huge profits can't be

considered as strong organizations as profit making is only one function of organizations. Keeping abreast with all the stakeholders is requirement for every organization to be an effective and successful organization. Out of all the stakeholders customers are considered to be the king now a day. Retaining and attracting new customers is triumph card for present world businesses.^[3]

Statement of the Problem

Telecom service, specifically mobile phone or cellular phone service network is one of the fastest growing industries across the world as well as in India. Some of the leading brands in this market are Idea, Vodafone, BSNL, Reliance, Tata and Airtel. The number of people who became mobile phone users in the past decade is very huge. A communication revolution is happening in the country with foot print of coverage reaching even rural parts of India and entry charges for customers in to the network dropping drastically. The usage charges are also now just a fraction of what it was in the beginning. The entire youth of the country is now familiar to mobile phones and the content and applications of it are ever growing due to emerging technologies. [4]

The telecom service providers are continuously coming up with different call, messaging, internet and other packages to generate better revenues for their respective companies. However, more revenues can be generated only when the demands of target market are met. Customer satisfaction is the key to success for any company dealing with products and services. [5] In the competitive market, customers have many available options to select among a telecom mobile companies. Therefore, the companies should look for factors to attract and retain their customers. As mobile telecommunication network has developed over several successful generations, technology plays an important role in this context. Technology enhances service quality particularly in making a video call. Hence, these companies can use service quality as a measure to appraise their customers' satisfaction continuously. [6]

Review of Literature

The followings are the related reviews

Mohammed Upal (2008) concluded that human resource motivational factor and the factors that affect aesthetic and rational mind of consumer for continuous improvement in the whole system, so that better service can be delivered.^[7]

Wieslaw Urban (2009) his research work reveals that the gap between managers' perception of customers' expectation and service specifications existing in organizations. In a service organization usually more quality gaps might be identified. Identification of specific quality gaps is advantageous from a management point of view.^[8]

Ishfaq Ahmed et al. (2010) in their research study all the dimension have a significant relationship with the satisfaction of customers. This research provides a direction to the decision makers regarding the dimensions of service quality those require high level of attention.^[9]

Siew-Phaik Loke et al. (2011) in their findings reveals that a positive relationship between service quality and customer satisfaction except in the area of tangibility or physical aspects.^[10] Rajkumar Paulrajan and Harish Rajkumar (2011) in their research study shows communication and price were most influential and most preferential factors in selecting telecommunication service provider. However,

product quality and availability has a significant impact on consumer perception choice in selecting cellular mobile service provider.^[11]

Shahzad Khan and Saima Afsheen (2012) in their research results indicated that price fairness, customer services and coverage are major factors which can highly affect the customer satisfaction. The results of research study proved that there is positive and significant relationship between dependent variable (customer satisfaction) and independent variables (customer service, price fairness, sales promotion, coverage, signal strength & promotion). Anantha Raj A.Arokiasamy and Abdul Ghanikanesanbin Abdullah (2013) in their research found that all five service quality dimensions positively influenced customer satisfaction in terms of loyalty and attitudes. In addition, t-test results showed that there was a significant gap between the perceived satisfaction and expectation (P-E) on all of the service quality dimensions. [13]

Gantasala V.Prabhakar and Padmakumar Ram (2013) in their research results reiterate the propositions that SERVQUAL dimensions influence Customer Satisfaction and that the influence is accentuated with the mediatory influence of communication.^[14]

Muhammed Arslan et al. (2014) concluded that service reliability and service empathy both have an effect on customer satisfaction. [15] Silky Vigg Kushwah and Ahuti Bhargav (2014) in their research study reveal that there was a statistically significant gap between customers' expectations and perceptions of mobile phone services. Moreover, the service quality of mobile phone service providers in India is low and that they need to take urgent steps to shore up the quality of their services to meet and if possible, transcend the customers' expectations. [16]

Sidra Ansar and Samreen Lodhi (2015) in their research reveals that service quality not depend on customer satisfaction because if employees not get enough recognitions towards company they not entertain customers properly which turn into deprived service quality and customer satisfaction. Customer satisfaction is not influencing by network strength because in sometime customer did not communicate well because of slow network coverage and it will improved by implementing modern technology. Vadivelu (2015) his research study found that there is a significant positive association between service quality and customer satisfaction. Kannan, K.S and Bino Thomas (2015) in their research analysis was carried out based on the five dimensions of the SERVQUAL model, viz, reliability, responsiveness, assurance, empathy and tangible aspects. The outcome of the study reveals that reliability, responsiveness, assurance, and empathy had a positive influence on the customer attitude in terms of satisfaction and loyalty. [19]

Charles Makanyeza and Darlington Mumiriki (2016) in their research found that the customer category does not moderate the effect of service quality on customer satisfaction. Practical/managerial implications are, generally, that it is not necessary to segment customers by customer category when managing service quality to achieve customer satisfaction. [20]

Mahalaxmi, K.R and Suresh Kumar, N (2017) in their research study aim is to measure the service quality and the identification of factors which is preferred by the customers to prefer the reliance JIO in Trichy region. The study reveals that the people are aware of the tariffs/plans of JIO. Call dropping, internet speed is decreased

at the time of using the network, lack of network coverage in rural areas were the causes for dissatisfaction in Reliance JIO.^[21] Saravanan, S and Manigandan, K (2017) in their research found that service quality directly affects the customer satisfaction and loyalty. It determines the customer satisfaction by matching the customer expectations with perceived service. This is defined as Gap in Service sector. All the telecom industries are striving to reduce this gap occurred in service delivery system. By reducing the gap, the quality of service will improve in terms of prompt service, zero defects, effective communication and individualized attention to customers. It gives the profitability, business growth, growth of market share, gain value and financial performance to the organization.^[22]

In the light of the preceding review of the studies carried out in this area, we find that there are very few studies focusing on analysis of services quality expectations and perceptions of customers of mobile service providers in the Indian context. So, this study tried to compare the expectations and perceptions of customers of mobile phone networks.

Methodology

The objectives of the study are

- To examine the socio economic profile of the customers of mobile phone networks in Virudhunagar District.
- To identify the service quality gap of dimensions wise in mobile phone networks.
- To test the relationship between socio economic profile of the customers and dimensions wise of service quality gap of mobile phone networks.
- To give suitable suggestions on the basis of findings in the study area.

In order to fulfill the above objectives of the study, the researcher has framed the null hypothesis that there is no significant relationship between socio economic profile of the customers such as gender, marital status, age, educational status, employment status, income level, networks preferred by the respondents, kind of service, amount of recharge, period of usage and willingness to switch over and dimensions of service quality gap of mobile phone networks.

Sampling Design

This research study is both analytical and descriptive in nature. It covers both primary and secondary data. The researcher has gathered the primary data from customers of mobile phone networks. The customers of mobile phone networks are large in number. So, the researcher can't collect the entire customers of mobile phone networks. Hence, the researcher has chosen the virudhunagar district and adopts purposive sampling method to select 400 customers of mobile phone networks. The secondary data were collected from the standard journals, websites and so on through internet.

Statistical Tools and Techniques

The researcher has used the following statistical tools through SPSS (Statistical Packages for Social Sciences)

- Percentage analysis and
- Chi-Square test

Results and Discussion

Socio Economic Profile of the Mobile Phone Users

The researcher has analyzed the socio-economic background of the telecom service sector customers in Virudhunagar district. It includes factors such as, gender, marital status, age, educational status, employment status, income level, currently used mobile telecom networks, kind of service, amount of recharge, period of usage and switch over to other network.

Table 1: Socio Economic Profile of the Mobile Phone Users

S.No.	Particulars	No. of Respondents	Percentage		
Gender Wise Classification					
1.	Male	203	50.75		
2.	Female	197	49.25		
	Total	400	100.00		
	Marital Status Wise Classific	cation			
1.	Married	213	53.25		
2.	Un married	187	46.75		
	Total	400	100.00		
	Age Wise Classification	1			
1	Below 18 years	47	11.75		
2	19 to 30 years	193	48.25		
3	31 to 50 years	126	31.50		
4	Above 51 years	34	08.50		
	Total	400	100.00		
	Educational Status				
1.	Literate	307	76.75		
2.	Illiterate	93	23.25		
Total		400	100.00		
	Employment Status				
1.	Employed	285	71.25		
2.	Unemployed	115	28.75		
Total		400	100.00		
	Income Wise Classification	on			
1.	Below Rs.5,000	78	27.37		
2.	Rs.5,001- Rs.15,000	116	40.70		
3.	Rs.15,001- Rs.30,000	45	15.79		
4.	Above Rs.30,000	46	16.14		
	Total	285	100.00		
	Networks Preferred by the Resp	pondents			
1.	BSNL	68	17.00		
2.	Airtel	98	24.50		
3.	Vodafone	156	39.00		
4.	Reliance	23	05.80		
5.	Aircel	33	08.25		
6.	Idea	22	05.50		
Total 400 100.00					

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	Kind of Service					
1.	Prepaid	387	96.75			
2.	Postpaid	13	3.25			
	Total	400	100.00			
	Amount of Recharge					
1.	Below Rs.50	199	51.42			
2.	Rs.51- Rs.100	121	31.27			
3.	Rs.101 – Rs.200	51	13.18			
4.	Above Rs.200	16	04.13			
	Total	400	100.00			
	Period of Usage					
1.	Less than 1 month	38	09.50			
2.	1 to 6 Months	50	12.50			
3.	6 to 12 months	80	20.00			
4.	1 to 2 year	106	26.50			
5.	Above 2 year	126	31.50			
	Total	400	100.00			
	Willingness to Switch over					
1.	Switch over	83	20.75			
2.	Not Switch over	317	79.25			
	Total	400	100.00			

Source: Primary Data

The analysis of the surveyed data reveals that 50.75 per cent are male, 53.25 per cent are married, 48.25 per cent are between the age group of 19 to 30 years, 76.75 per cent are literate customers, 71.25 per cent are employed people, 40.70 per cent are earning below Rs.5,000, 39.00 per cent of the respondents have preferred Vodafone networks, 96.75 per cent of the customers have prepaid services, 51.42 per cent of the customers are recharged for below Rs.50, 31.50 per cent of the customers are using the telecom services for more than 2 years and 79.25 per cent of the customers do not have idea for brand switch over.

Service Quality Gap of Mobile Phone Network

The researcher has gathered the details regarding service quality dimensions wise of mobile phone network. Besides, the researcher has collected the data relating to customers' expectation towards service quality of mobile phone network and customers' perceived towards service quality of mobile phone network. The dimensions are tangibility, reliability, responsiveness, empathy and assurance. The researcher has collected the data according to these dimensions through likert five point scaling techniques. A Service quality gap is the difference, imbalance or disparity which is determined to exist between customers' perception of service quality dimension and their prior expectation. The Computation of Service quality is *Customer's Perception – Customer's Expectations*. [23]

The management of service quality is based on the expectations and perception of customers. The main aim of each and every institutions or organization or any other service sectors is to minimize the gap between perception and expectation. Moreover, many previous researchers such as Lehtinen and

Gronroos ^[27] also applied gap principles similar to that proposed by Parasuraman et al. ^[28].

The researcher has computed the service quality gap and the gap may be divided into two categories one is negative gap and another one is positive gap. The results are presented in dimensions wise.

Table 2: Service Quality Gap – Dimensions wise of the Mobile Phone Networks

S.No	Dimensions	Negative Gap	Positive Gap	Total
		(Percentage)	(Percentage)	(Percentage)
1	Tangibility	151	249	400
		(37.75)	(62.25)	(100.00)
2	Reliability	92	308	400
		(23.00)	(77.00)	(100.00)
3	Responsiveness	116	284	400
		(29.00)	(71.00)	(100.00)
4	Empathy	169	231	400
		(42.25)	(57.75)	(100.00)
5	Assurance	162	238	400
		(40.50)	(59.50)	(100.00)
6	Total Service Quality	175	225	400
	Dimensions	(43.75)	(56.25)	(100.00)

Source: Computed Data

Table 2 reveals that service quality gap dimensions wise. The results found that all the dimensions have positive gap. Hence, the mobile phone networks have provided quality of services to their customers based on their expectations.

A Relationship Study: Socio Economic Profile of the Customers and Dimensions of Service Quality Gap of Mobile Phone Networks

The researcher has used Chi-Square test to test the relationship between socio economic profile of the customers such as gender, marital status, age, educational status, employment status, income level, networks preferred by the respondents, kind of service, amount of recharge, period of usage and willingness to switch over and dimensions of service quality gap of mobile phone networks.

Chi-Square Test

Chi-Square test is one of the simplest and mostly widely used non-parametric tests in statistical work. The χ^2 symbol is Greek letter Chi. The χ^2 was first used by Karl Pearson in the year 1900. The quantity χ^2 describes the magnitude of the discrepancy between theory and observation. The test statistics of χ^2 has been computed as follows.^[29]

$$Chi-Square \ test = \sum \frac{(O-E)^2}{E}$$

$$E = \frac{Row \ total \ X \ Column \ total}{Grand \ Total}$$

$$Df = (r-1) \ (c-1)$$

$$Where \ O = Observed \ Frequency$$

$$E = Expected \ Frequency$$

$$Df = Degrees \ of \ freedom$$

R = Row C = Column

Relationship between Socio Economic Variables and Dimensions of Service Quality Gap of Mobile Phone Networks

The dimensions of service quality gap may be varied among the customers based on their socio economic status. The relationship between socio economic variables and dimensions of service quality gap of mobile phone networks has been analyzed with the following hypothesis.

Hypothesis

"There is no significant relationship between socio economic variables and dimensions of service quality gap of mobile phone networks".

To test the above hypothesis, Pearson's chi-square test is applied and the result is presented in the Table 3.

Table 3: Results of Chi-Square Test

	Pearson			
S.No	Dimensions	Socio Economic Variables	Chi-Square	Result
			Value	Result
1	Tangibility	Gender	0.454	No Significant
1	rangionity	Marital Status	0.742	No Significant
			0.742	Significant
		Age		Ŭ
		Educational Status	0.787	No Significant
		Employment Status	0.029	Significant
		Income Level	0.470	No Significant
		Networks Preferred by the Respondents	0.014	Significant
		Kind of Service	0.688	No Significant
		Amount of Recharge	0.002	Significant
		Period of Usage	0.000	Significant
		Willingness to switch over	0.027	Significant
2	Reliability	Gender	0.207	No Significant
		Marital Status	0.810	No Significant
		Age	0.000	Significant
		Educational Status	0.008	Significant
		Employment Status	0.006	Significant
		Income Level	0.165	No Significant
		Networks Preferred by the Respondents	0.000	Significant
		Kind of Service	0.430	No Significant
		Amount of Recharge	0.000	Significant
		Period of Usage	0.040	Significant
		Willingness to switch over	0.000	Significant
3	Responsiveness	Gender	0.017	Significant
		Marital Status	0.959	No Significant
		Age	0.038	Significant
		Educational Status	0.036	Significant

		Employment Status	0.290	No Significant
		Income Level	0.000	Significant
		Networks Preferred by the	0.000	Significant
		Respondents		
		Kind of Service	0.018	Significant
		Amount of Recharge	0.001	Significant
		Period of Usage	0.000	Significant
		Willingness to switch over	0.060	No Significant
4	Empathy	Gender	0.243	No Significant
		Marital Status	0.015	Significant
		Age	0.047	Significant
		Educational Status	0.374	No Significant
		Employment Status	0.032	Significant
		Income Level	0.046	Significant
		Networks Preferred by the	0.000	Significant
		Respondents		
		Kind of Service	0.963	No Significant
		Amount of Recharge	0.007	Significant
		Period of Usage	0.000	Significant
		Willingness to switch over	0.000	Significant
5	Assurance	Gender	0.016	Significant
		Marital Status	0.723	No Significant
		Age	0.000	Significant
		Educational Status	0.000	Significant
		Employment Status	0.441	No Significant
		Income Level	0.030	Significant
		Networks Preferred by the	0.000	Significant
		Respondents		
		Kind of Service	0.002	Significant
		Amount of Recharge	0.000	Significant
		Period of Usage	0.000	Significant
		Willingness to switch over	0.000	Significant
6	Overall service quality	Gender	0.000	Significant
		Marital Status	0.040	Significant
		Age	0.000	Significant
		Educational Status	0.000	Significant
		Employment Status	0.000	Significant
		Income Level	0.014	Significant
		Networks Preferred by the	0.000	Significant
		Respondents	0.004	G: :c
		Kind of Service	0.024	Significant
		Amount of Recharge	0.019	Significant
		Period of Usage	0.001	Significant
	es Computed Date	Willingness to switch over	0.000	Significant

Source: Computed Data

Table 3 reveals the results of chi-square test for socio economic profile of the customers and dimensions of service quality gap of mobile phone networks in the study area. In tangibility, the results reveal that there is no significant relationship between gender, marital status, educational status, income level, kind of service and tangibility dimension of service quality gap of mobile phone networks. So, it is concluded that gender, marital status, educational status, income level and kind of service do not influence the tangibility dimension of service quality gap of mobile phone networks. Besides, this study found that there is significant relationship between age, employment status, networks preferred by the respondents, amount of recharge, period of usage and willingness to switch over and tangibility dimension of service quality gap of mobile phone networks.

In reliability, the chi-square test shows that there is significant relationship between age, educational status, employment status, networks preferred by the respondents, amount of recharge, period of usage and willingness to switch over and the reliability dimension of service quality gap of mobile phone networks. These variables are influence the reliability dimension of service quality gap of mobile phone networks. Moreover, the chi-square results found that there is no significant relationship between gender, marital status, income level and kind of service and the reliability dimension of service quality gap of mobile phone networks. Hence, it is concluded that socio economic variables such as gender, marital status, income level and kind of service do not influence the reliability dimension of service quality gap of mobile phone networks.

The chi-square result of responsiveness factor reveals that there is significant association between socio economic variables such as gender, age, educational status, income level, networks preferred by the respondents, kind of service, amount of recharge and period of usage and the service quality gap of responsiveness dimension of mobile phone networks. Besides, the chi-square found that there is no significant association between marital status, employment status and willingness to switch over and the responsiveness dimension of service quality gap of mobile phone networks.

In case of Empathy factor, the result reveals that there is no significant relationship between gender, educational status and kind of service and the empathy dimension of service quality gap of mobile phone networks. These three socio economic variables do not influence the empathy dimension of service quality gap of mobile phone networks. This result found that there is significant association between socio economic variables such as marital status, age, employment status, income level, networks preferred by the respondents, amount of recharge, period of usage and willingness to switch over and the empathy dimension of service quality gap of mobile phone networks. So, it is concluded that the empathy dimension of service quality gap of mobile phone networks is based on the socio economic variables of the customers.

Assurance, the chi-square result reveals that there is significant relationship between socio economic variables such as gender, age, educational status, income level, networks preferred by the customers, kind of service, amount of recharge, period of usage and willingness to switch over and the assurance dimension of service quality gap of mobile phone networks. These socio economic variables are influence the assurance dimension of service quality gap of mobile phone networks. Further, the

result found that there is no significant relationship between marital status and employment status and the assurance dimension of service quality gap of mobile phone networks. Both, marital and employment status do not influence the service quality gap of assurance dimension of mobile phone networks.

Overall service quality dimension, the chi-square result reveals that there is significant association between socio economic variables such as gender, marital status, age, educational status, employment status, income level, networks preferred by the customers, kind of service, amount of recharge, period of usage and willingness to switch over and the overall service quality gap dimension of mobile phone networks. Hence, it is concluded that these socio economic variables are influence the overall service quality gap dimension of mobile phone networks.

Suggestions of the Study

The researcher has given some suggestions based on the findings of the study. They are:

- ❖ In case of tangibility dimension, the chi-square results reveal that gender, marital status, educational status, income level and kind of service do not influence the tangibility dimension of service quality gap of mobile phone networks. So, the researcher has recommended that the mobile phone networks should more concentrate on tangibility dimension for attraction more numbers of customers in mobile phone networks. That would lead to improve the socio economic profile of the customers in mobile phone networks. Besides, the mobile phone network industry should have attractive and innovative service offers that are match with customer needs.
- ❖ The chi-square results found that socio economic variables such as gender, marital status, income level and kind of service do not influence the reliability dimension of service quality gap of mobile phone networks. Hence, the researcher has suggested that the mobile phone networks should provide reliable services to their customers at appropriate time. This will help to retain the customers in long period of time.
- There is no significant association between marital status, employment status and willingness to switch over and the responsiveness dimension of service quality gap of mobile phone networks. These socio economic variables do not influence the responsiveness dimension of service quality gap of mobile phone networks. Therefore, the researcher has suggested that the mobile phone industry workers/employees should respond at the time of customer's request and queries. The employees at all interaction point should provide prompt service to the customers. Besides, the mobile phone networks should maintain operational efficiency through modern technology systems and better employees/workers management.
- ❖ In case of Empathy factor, the result reveals that there is no significant relationship between gender, educational status and kind of service and the empathy dimension of service quality gap of mobile phone networks. So, the researcher has recommended that the mobile phone industry should provide proper basic management training to the employees to serve the customers professionally. Moreover, the mobile phone industry should maintain customer relationship management strategy for in-depth understanding of

- consumer motivation and lifestyle factors. This would lead to realize and articulate customers' needs.
- ❖ Marital and employment status do not influence the service quality gap of assurance dimension of mobile phone networks. Hence, the researcher has recommended that the mobile phone industry should concentrate on internal management system to serve the services to the customers on time. The employees should give assurance to satisfy the customers' needs and wants during their relationship.

Conclusion

In the highly competitive market place, the mobile phone industry offers quality of services to the attractive new customers and retain the existing customers and to convert them as loyal customers. In this research study, all the dimensions have positive service quality gap. The mobile phone network is mainly based on the service quality. In order to maintain the positive gap, the mobile phone network should give quality services to the customers quickly and resolve their queries and problems. The mobile phone industry should provide proper training to the employees to handle the customers with courteous behaviour. Besides, the mobile phone industry should train their employees to be skilled and able to provide quick and safe access for their customers. Hence, this study is essential for the Indian mobile phone industry to strengthen their service quality provided to its customers.

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