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A study on the dynamics that influence customer satisfaction and loyalty towards various telecom service providers.

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Abstract

The Indian Telecom industry has witnessed exponential growth in the past few years. India today ranks second in the world in terms of the number of telephone subscriptions with a subscriber base of 1197.87 million at the end of Dec 2018. The overall tele density in India is 89.78 as on Dec 2018 as per TRAI reports. India also holds the distinction of being the second largest country in the world in terms of internet subscribers which stood at 604.21 million by the end of Dec 2018. The current governments push to promote digitization of India through the National Digital Communications policy which was launched in November 2018 has also provided a major thrust to the rapid growth in the telecom sector. This policy envisions to attract FDI to the tune of US$100 billion in the telecommunications sector by the year 2022.

This has resulted in increased pressure on margins and better pricing power due to consolidation in the telecom industry. In such a scenario, service quality has become a fundamental differentiating factor; both in terms of increasing customer base as well as maintaining brand loyalty of existing customers. Though this aspect of service quality is very vital from the perspective of sustainable growth and revenue generation, yet it has always been overlooked by most telecom players whose only priority seems to be increasing their subscriber base. The present study attempts to identify the factors that affect customer satisfaction and explore the interrelationship between those factors with brand loyalty and customer retention.

As a part of this study, relevant literature review was done, and an instrument was developed based on the SERVQUAL scale along with the added dimension of customer perceived network quality to measure the service delivery standards and the technical aspects of various service providers. The survey was conducted in the city of Guwahati with a sample size of 100 regular customers of wireless mobile services.

The factors included in the study were subject to multiple regression analysis to analyse and highlight the key service improvement areas. Also, factor analysis was conducted to find out the most significant factors from the customer point of view which affect customer loyalty. The results of the study highlighted that responsiveness were the most significant factor which impacts customer satisfaction. The other factors that impacted customer satisfaction as highlighted by the regression model in order of priority was reliability, customer perceived network quality, assurance, convenience, empathy and tangibility of the service provided. As indicated in the study, telecom service providers need to prioritize the intangible aspects of the service which have a greater impact on customers perceived service quality perceptions rather than the physical aspects of the service. The study also found that with the advent of mobile number portability,

customers are more prone to brand switching if they are not satisfied with their current service providers. It can therefore be concluded that customer satisfaction directly affects brand loyalty w.r.t mobile service providers.

Literature review

As the Indian cellular industry has been experiencing stratospheric growth in the past few years due to the advent of rapid change in technology and accessibility of mobile services as well as constructive policies of the government aimed at digitizing India, so, the cellular industry has been growing at a geometric proportion, both in terms of subscriber base and revenue. In this context, the purpose of this study is to examine the various aspects of the service quality dimensions that impact end user satisfaction. In this regard, service quality has been quantified in terms of two distinctive parameters, both from a functional and a technical point of view. The purpose of the study is to highlight the most significant aspects that impact customer expectation and to help mobile service providers to have a better grasp of the underlying service gap that might exist in the minds of the customers.

Objectives of the study

a. To identify the most important factors that affect customer satisfaction for cellular phone users.
b. To find the nature and strength of the relation between customer satisfaction, customer retention and brand loyalty.

Some of the relevant literature that is pertinent to the study are mentioned as under.

- A study by Almossawi (2012) in Bahrain concludes that switching between service providers is high if there is dissatisfaction w.r.t the network coverage, charges and value-added offers. They also concluded that there was a substantial positive relationship between the customer satisfaction and retention. Their study also highlighted that a higher satisfaction did not necessarily relate to a higher customer loyalty in terms of cellular service users.
- A Malaysian study by Chang Keng Pee and H.L Chong (2011) concludes that customers perceived quality was an important variable which affected customer satisfaction. They also concluded that customer satisfaction was dependant on the perceived quality of the service. They also found that among the factors affecting customer perceived quality, price was the leading determinant which influenced satisfaction with a cellular service provider.
- Another study by Nurysh, Naghavi and Chan Yin Fah (2019) concludes that the young generation in the age group of 18-25 years are not very particular about their service provider and the value added services offered; rather they are more concerned with the benefits offered w.r.t internet services and their charges.
- A study on Customer Preferences and Satisfaction done in Jodhpur, Rajasthan by Rajpurojit and Vasistha (2011) concludes that mobile tariff pricing is the single most important predictor of customer decision making in terms of choosing a particular service provider followed by the quality of network coverage and the brand image of the service provider. The study also highlights the influence of the family members in selecting a cellular service provider.
- A study by Sharma and Jhamb (2017) concludes that there are major gaps in customer expectations and actual service in the case of most cellular service providers. They found

that empathy, as one of the variables in the SERVQUAL was a highly rated variable by most of the users of cellular service providers. The study concluded that telecom operators need to lower the service gap to make their services more reliable from the customer point of view.

- A study by Parasuraman, Zeithaml and Berry, 1988 of the functional aspect of service quality defines it as a global judgement or attitude relating to the superiority of the service.
- A TRAI (2002) report defines the technical quality of a cellular network indicator of performance of a network and of the degree to which the network conforms to the stipulated norms.

Research Methodology

The objective of the study is to find out the customer perceptions in terms of the various dimensions of service quality w.r.t their cellular service providers. A descriptive research-based approach was adopted as the end objective of the study was to find the cause and effect between customer satisfaction and the various factors that impacted overall customer satisfaction in the case of mobile phone users. To measure the functional aspect of service quality, the SERVQUAL scale with the five dimensions of tangibility, reliability, assurance, empathy and responsiveness. The SERVQUAL scale had been found to have a high reliability in measuring service quality in the telecom industry. (A study by Van Der Wall, Pampallis and Bond, 2002) To measure the technical construct of the perceived service quality, the construct of network quality (which includes aspects like voice clarity, signal strength,) was used to find out the customers perceived satisfaction. This would help to identify is there is any service gap, both in terms of the functional and technical aspect of the construct in question. Each of the construct measuring functional and technical quality has been assessed on a five-point Likert scale. The overall perception of service quality has been evaluated using a single statement asking the respondent's opinion about their overall perception about the service quality.

Data Collection

The survey was conducted in the city of Guwahati within a time frame of one month, ensuring that the sample is adequately normally distributed. A total of 220 questionnaires was circulated out of which 200 was finally considered for the final data analysis due to non-response error. The method of sampling for the purpose of the study was the convenience sampling method. To ensure that the sample is normally distributed, special care was taken to ensure that the respondents sample frame had respondents from all the major cellular operators operating in the city of Guwahati which included Reliance Jio, Airtel, Vodafone, Idea, and BSNL. Most of the respondents considered for the survey (56 %) were pre-paid customers and the rest 44 percent respondents were post-paid users of various telecom operators. The demographic profile of the respondents has been summarized in table 1 below:

Respondent Characteristics:	% of Respondents
Gender of Respondents:	
Male:	118
Female:	82
Age Group:	
Less than 25 years	62
26-30 years	60
31-40 years	48
Above 40 years	30
Educational Qualification:	
Undergraduate	36
Graduate	98
Postgraduate	66
Profession:	
Public sector employee	32
Private sector employee	106
Student	28
Professional	10
Self-employed	14
Housewife	10
Telecom Service Provider:	
Reliance Jio	94
BSNL	24
Airtel	36
Vodafone	34
Idea	12
Type of connection:	
Prepaid	112
Postpaid	88

Table 1

Analysis

To check the consistency of the items in the questionnaire, reliability test was conducted. The reliability of items was assessed by computing the Cronbach's alpha, that measures the internal consistency of the items. Cronbach's alpha calculates the average of all possible split-half reliabilities for a multiple item scale. This score shows whether the average score of all split-half reliabilities converge to a point or not. The items in the questionnaire were found to have a reliability score from 0.80 to 0.89**,** indicating very good consistency among the items within each dimension of the multiple item scale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
.893	.895	27

Table 2: Cronbach's Alpha score for the 26 items of the scale

Item Statistics			
	Mean	Std. Deviation	N
Service branches in convenient places	3.13	1.065	60
Visually appealing physical facilities	3.17	.806	60
Employees are well dressed and neat in appearance	3.02	1.017	60
Service Provides has up to date equipment	2.97	.974	60
Contact employees perform the service right the 1st time	3.02	.948	60
Service provider provides service at the promised time.	2.88	1.075	60
Kept well informed about your complaints	2.85	1.162	60
Service charges & Billing system is accurate	2.93	1.103	60
Helpline is easily available	2.70	1.253	60
Employees are willing to help	3.22	.940	60
Resolves your complaints quickly and promptly	2.75	1.114	60
Takes your complaints seriously	2.82	1.097	60
Contact employees are friendly and polite	3.45	.811	60
Employees have adequate knowledge of tariffs and plans	3.20	.935	60
Behaviour of employees instils confidence in you	3.22	.904	60
You feel safe in your transactions with your service provider	3.48	.676	60
Employees have your best interests at heart	3.03	.991	60
Service Provider gives you individual attention	2.90	1.130	60
Your Service provider understands your specific needs	2.95	1.096	60
Retailer Network of your service provider is easily located	2.78	1.195	60
Provides enough geographical coverage	2.30	1.183	60
You experience minimum termination of calls	3.22	.976	60
You get clear and undisturbed voice	2.75	1.159	60
You can make calls at peak hours	2.82	1.142	60
Perception about overall service quality	3.43	.698	60

Regression Analysis Results for Relative Importance of Service Quality Dimensions:

Further, in order to determine the relative importance of six customer-perceived service quality dimensions, they were subjected to regression analysis. For this, the multiple regression analysis model was followed in which the respondent's overall judgment of service quality was considered as the dependent variable and the six-customer perceived service quality dimensions were made independent variables. Thus, the average score for each of the dimensions were regressed on the overall service quality score obtained from each respondent surveyed. The beta (β) coefficients provided the relative importance. The dimension with the largest coefficient represents the most important dimension in terms of its influence on overall quality perceptions. The next largest coefficient represents the second most influential dimension and so forth. The objective of

regression analysis was to determine the relative importance of six customer-perceived service quality dimensions, they were subjected to regression analysis.

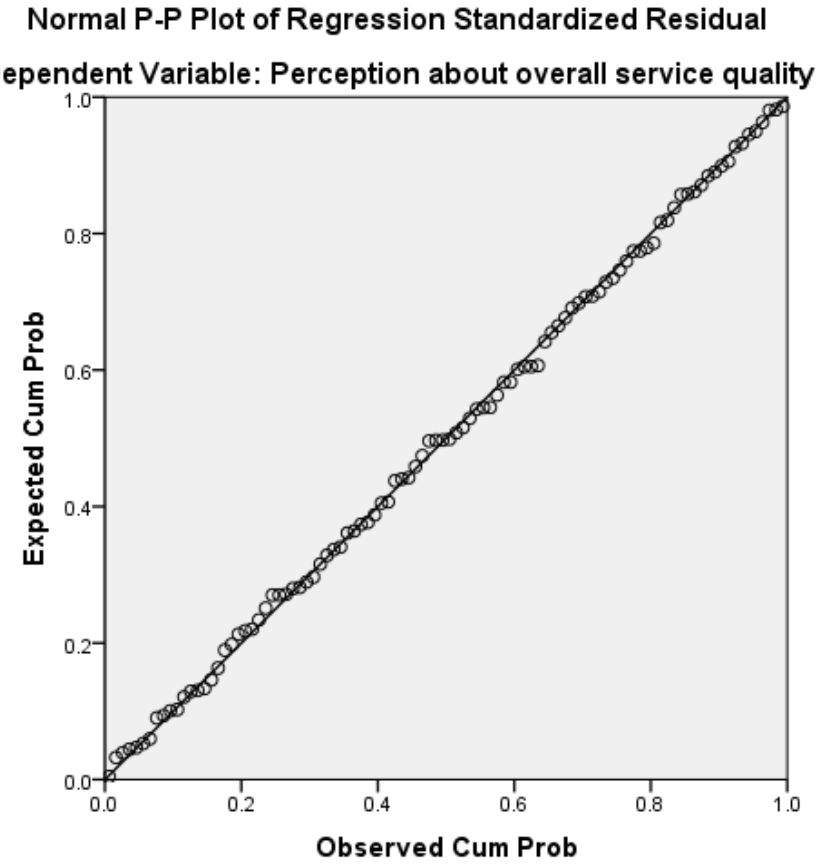
- **Dependent Variable** = Respondent's overall judgment of service quality was considered as the dependent variable.
- **Independent Variable** = The six-customer perceived service quality dimensions were made independent variables.
- The beta (β) coefficients provided the relative importance. The dimension with the largest coefficient represents the most important dimension in terms of its influence on overall quality perceptions.

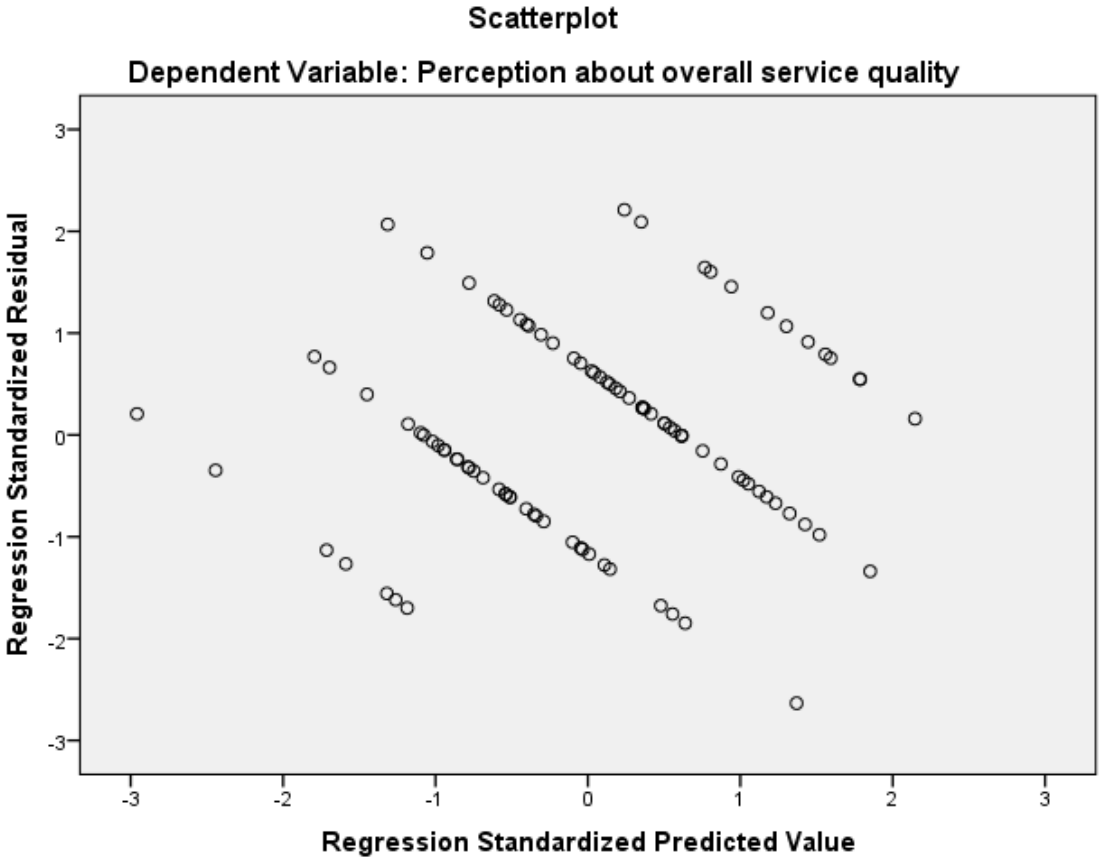
Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.387	.527		.734	.464		
	Tangible	.041	.117	.027	.350	.727	.832	1.201
	Reliability	-.054	.142	.041	-.381	.704	.419	2.387
	Responsiveness	.074	.123	.064	.600	.550	.419	2.386
	Assurance	.111	.148	.068	.754	.453	.584	1.712
	Empathy	.034	.126	.024	.270	.788	.612	1.635
	Network	.737	.084	.711	8.777	.000	.735	1.361

a. Dependent Variable: Perception about overall service quality

If we see the Coefficients table, we can now look at the co-linearity statistics and how to interpret them. We have **"Tolerance"** (how much variability for this specific independent variable is not explained by the other independent variables in the model). **"Tolerance"** above 0.10 is good. The **"Variance inflation"** mentioned in the table as **"VI"** factor must be less than 10.





Now, let us look at the charts. Let's look at the Normal probability plot. What we want is that the points are relatively close to the line. Another way to look at the way, is to look at the scatter plot. We want all the points to be lying at a rectangle. No point should be exceeding 3 or negative three along the X or Y axis. It is a good scatter plot. We don't want Standard Deviation to exceed 3 or -3.

Residuals Statistics [a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.8859	4.9124	3.6400	.59290	200
Std. Predicted Value	-2.959	2.146	.000	1.000	200
Standard Error of Predicted Value	.062	.270	.141	.038	200
Adjusted Predicted Value	1.8496	4.8985	3.6436	.59349	200
Residual	-1.45181	1.21819	.00000	.53408	200
Std. Residual	-2.635	2.211	.000	.969	200
Stud. Residual	-2.767	2.258	-.003	1.003	200
Deleted Residual	-1.60122	1.27118	-.00358	.57264	200
Stud. Deleted Residual	-2.873	2.310	-.003	1.013	200
Mahal. Distance	.253	22.860	5.940	3.857	200
Cook's Distance	.000	.117	.010	.018	200
Centred Leverage Value	.003	.231	.060	.039	200

a. Dependent Variable: Perception about overall service quality

We now look at the standard residuals which we can find at the "Residuals Statistic". We want the standard residuals to range between -3 and 3. There is one more way of checking, if there are

outliers in the data, and it is the Cook's distance. We don't want any Cook's distance score to be greater than 1 and we can see that the highest is 0.301. So, examining the Cook's distance, we can see that it is a pretty good data set in terms of the assumptions for a regression.

Now, we can evaluate the model and determine what it means. We know the assumptions were good, therefore we presume that the output is reliable and valid and useful. So, let us look at the model summary.

R square, called the coefficient of determination. What R square tells us is the amount of variance expressed as a percentage that is explained in the dependent variable by the independent variable; i.e. how much movement in the dependent variable is explained by the independent variable. We would want the value of R square to be greater than 0.3.

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.801	6	5.800	19.102	.000 [b]
	Residual	28.239	93	.304		
	Total	63.040	99			

a. Dependent Variable: Perception about overall service quality
b. Predictors: (Constant), Network, Tangible, Assurance, Empathy, Responsiveness, Reliability

Now, let's look at the ANOVA table. The Sig is 0.001. The null hypothesis is that the slope of this line is going to be zero. If it was greater than 0.05 then we would have to accept the null hypothesis. The result is very significant. What we want to know is that can the model predict the outcome by other than chance. Now look at the coefficients. Now look at the Standardized co-efficient Beta. We must look at the standardized coefficients to know how much one variable is greater than the other.

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.743[a]	.552	.523	.55104	.552	19.102	6	93	.000

a. Predictors: (Constant), Network, Tangible, Assurance, Empathy, Responsiveness, Reliability

b. Dependent Variable: Perception about overall service quality

Table 3: Regression Analysis Results for Relative Importance of Service Quality Dimensions

The results of multiple regression analysis are summarized above, and it is observed that the overall regression model is significant ($F=8.17$, $p<0.00$), with 55 percent (R square) of the variance in overall service quality explained by the independent variables.

Independent Variables	Beta (β)	Order Of importance
Reliability (Rel)	0.377	3
Assurance (Ass)	0.207	5

Tangibles (Tang)	0.054	6
Empathy (Emp)	0.313	4
Responsiveness (Resp)	0.471	2
Customer perceived network quality (Cpnq)	0.711	1

Table 4: Regression Analysis Results for Relative Importance of Service Quality Dimensions.

It is seen from the Beta values that Perceived Network quality is the most important. Followed by Responsiveness. All the factors were found to be significant and remained in the equation explaining overall service quality. The higher the beta co-efficient, more the contribution of factors in explaining service quality. As shown in the Table, the results indicate that perceived service quality is influenced by all the six dimensions with Network quality as the most important dimension, β coefficient = 0.711.

The results can be summarized as regression equation given below.

Overall service quality as perceived by customers = 0.377 (Reliability) + 0.207 (Assurance) + 0.054 (Tangibility) + 0.313 (Empathy) + 0.471 (Responsiveness) + 0.71 1 (Network)

Conclusion

The regression analysis highlighted the important areas of service improvement and revealed that not all the dimensions contribute equally to the customer's perceptions of service quality in cellular mobile context. Network quality, with the largest β value, is the best predictor of customer satisfaction.

Looking at this individual dimension, companies must have a better-quality network which can be achieved by technological up gradation and better-quality infrastructure. To improve Responsiveness, the customer support representatives should resolve customer complaints timely and take customer queries seriously.

Employees play a leading role in telecommunication service. The role of front-line staff becomes extremely important in making the interaction with customer pleasing. Customer loyalty is very important and will only happen if value added services are given importance by telecom service providers. Companies need to give services which are different from competitors' if they want customers to be loyal. With Mobile Number portability, companies need to have marketing strategies not only to retain customers but also attract new customers.

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