OPEN DEFENSE SEMINAR

A study on customer care activities in BSNL Telecommunication Services – A comparative study with private telecom service providers in Kerala

Researcher: Premkumar.G.

Sub Divisional Engineer , BSNL

Supervising Teacher: Dr. J Rajan

Member,Executive Body,

Kerala State Higher Education Council

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INTRODUCTION

- The development in telecommunication sector of any nation has been treated as one of the primary indicators of socioeconomic development of the nation. It acts as a major catalyst for the economic growth of the nation .

- The Indian Telecommunication industry witnessed an amazing growth and fast development during the recent past and the role of BSNL to revolutionize this sector is highly commendable. The telecom market in India was opened to private telecommunication service providers in 1994 through the National Telecom Policy-1994 (NTP-1994).The private service providers started operating their services in the country in 1994. Later on DOT decided to withdraw from the role of service provider and to continue only as license provider and policy wing of Government of India.

- BSNL started its mobile communication service on October 19,2002.The mobile communication service started in Kerala on October 22,2002, as the fourth provider. The other providers were Escotel (Now Idea) , BPL Mobile (Now Vodafone),and Airtel. Later Reliance and Tata Teleservices also entered in the mobile communication sector .

Significance of the Study

- BSNL is the major market share holder in telecommunication industries in Kerala . The private telecommunication service providers improve their positions day by day using the favorable environment. But the performance of BSNL is somewhat disparaging. The following facts were identified from the secondary data.

- The market share of BSNL in mobile telecommunication sector of Kerala is getting reduced day by day.

- The existence of the company BSNL is under threat since it is running in loss for the last many years.

Objectives of the Study

1. To study the different Customer care Activities provided by BSNL and other private Mobile Telecommunication Service Providers in Kerala.

2. To study the different factors affecting Service Quality of Mobile Telecommunication services offered by BSNL and other private Mobile Telecommunication Service Providers in Kerala.

3. To study the level of customer satisfaction in Mobile Telecommunication services provided by BSNL and other private Mobile Telecommunication Service Providers in Kerala.

4. To analyze the degree of impact of Customer care Activities on customer satisfaction in mobile telecommunication services in Kerala.

5. To analyze the degree of impact of Service Quality on customer satisfaction in mobile telecommunication services in Kerala.

6. To develop a conceptual model on the relationship among Customer care Activities , Service Quality and customer satisfaction in mobile telecommunication services.

Research Hypotheses

1. Ha(1): The Customer care Activities provided by Mobile Telecommunication

    Service Providers in Kerala is in a better position .

2. Ha(2): There is significant difference between the Customer care Activities provided by BSNL and private Mobile Telecommunication Service Providers in Kerala.

3. Ha(3): There is significant difference between the Customer care Activities

    provided by the Mobile Telecommunication Service providers in rural and urban sectors of Kerala.

4. Ha(4): There is significant difference between the Customer care Activities provided   by BSNL and private Mobile Telecommunication Service Providers in Rural part of Kerala.

5. Ha(5): There is significant difference between the Customer care Activities provided by BSNL and private Mobile Telecommunication Service Providers in Urban part of Kerala.

Research Hypotheses (Continued)

6. Ha(6): The Service Quality provided by Mobile Telecommunication Service Providers in Kerala is in a better position.

7. Ha(7): There is significant difference between the Service Quality provided by BSNL and private Mobile Telecommunication Service Providers in Kerala.

8. Ha(8): There is significant difference between the Service Quality provided by the Mobile Telecommunication Service Providers in rural and urban sectors of Kerala.

9. Ha(9): There is significant difference between the Service Quality provided by BSNL and private Mobile Telecommunication Service Providers in Rural part of Kerala.

10. Ha(10): There is significant difference between the Service Quality provided by BSNL and private Mobile Telecommunication Service Providers in Urban part of Kerala.

11. Ha(11): The Customer satisfaction in Mobile Telecommunication Service sector in Kerala is in a better position.

Research Hypotheses (Continued)

12. Ha(12): There is significant difference between the Customer satisfaction in BSNL and that in private Mobile Telecommunication Service sector in Kerala.

13. Ha(13): There is significant difference between the Customer satisfaction in the Mobile Telecommunication Service areas in rural and urban sectors of Kerala.

14. Ha(14): There is significant difference between the Customer satisfaction in BSNL and private   Mobile Telecommunication Service Providers in Rural part of Kerala

15. Ha(15): There is significant difference between the Customer satisfaction in BSNL and private   Mobile Telecommunication Service Providers in Urban part of Kerala.

16. Ha(16): The Customer care Activities in Mobile Telecommunication Services in Kerala is positively related with the Customer Satisfaction.

17. Ha(17): The Service Quality in Mobile Telecommunication Services in Kerala is positively related with the Customer Satisfaction.

Scope of the Study

➢This research work is an attempt to study the different customer care activities in the mobile telecommunication service sector.

➢An attempt to study the various factors affecting Service Quality in the mobile telecommunication service sector also done.

➢The sample region is Kerala state.

➢Analysis is based on primary data collected from the mobile telecommunication customers of BSNL , the only State owned telecom service provider and also from the customers of leading private mobile telecommunication service providers using structured questionnaire.

Limitations of the Study

❖ This study focuses only on the mobile telecommunication service sector.

❖ The respondents are selected only from the State of Kerala.

❖ In the private mobile telecommunication service sector the customers of only three major companies namely IDEA, VODAFONE and AIRTEL are selected.

THEORETICAL FRAMEWORK
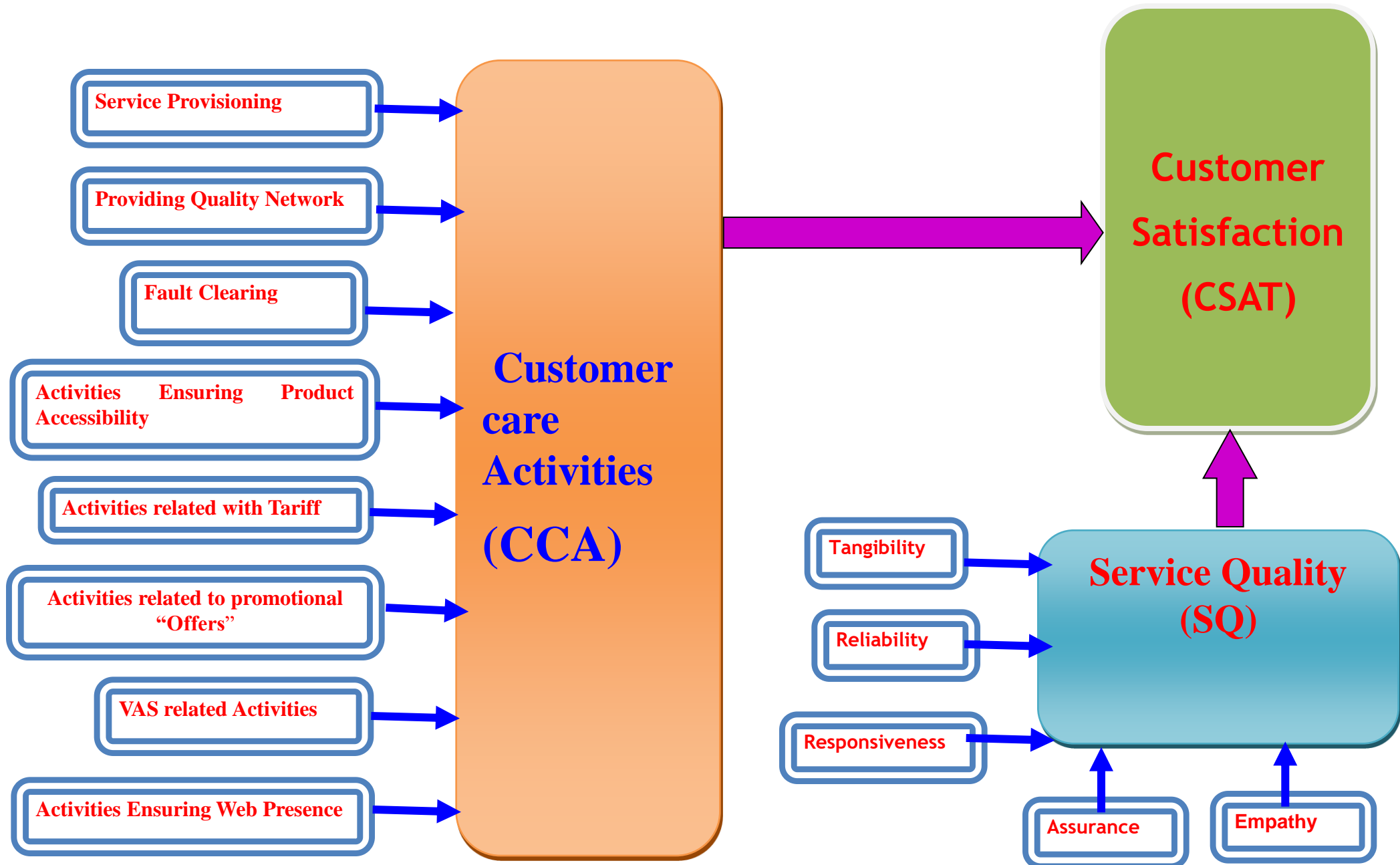
Customer care Activities

Components of Customer care activities are identified.

1.	Service Provisioning,
2.	 Providing Quality Network,
3.	Fault Clearing,
4.	Activities leading to Accessibility of Products,
5.	 Activities related with Tariff,
6.	 Activities related with promotional "offers",
7.	 VAS related Activities
8.	Activities Ensuring Web Presence

Service Quality

- There are five variables which determine the construct Service Quality. They are (i)Tangibility, (ii) Reliability, (iii) Responsiveness, (iv) Assurance and (v) Empathy.

- To design the survey instruments for Service quality the famous SERVQUAL model is used. It is based on 22 item SERVQUAL scale developed by Parasuraman et al. (Parasuraman, A Zeithaml, & L Berry, 1991)

Customer Satisfaction

Customer Satisfaction is measured with the help of four variables.

Satisfaction, Emotional Attachment, Word Of Mouth and Guidance from Service Provider.

Research Methodology

Nature and Source of Data

➢ Primary data

Using well-structured questionnaire, which is administered personally to the respondents

➢ Secondary data

The secondary data for this research study were collected from different resources like articles, journals, publications, press releases, working papers, previous study reports, University and IIM e-resources and also from the internet. The secondary data were also collected from different web sites including those of the Department of Telecommunications (DoT), Government of India, Telecom Regulatory Authority of India (TRAI), Telecom Service Providers and many other relevant sources. The data collected from the secondary resources contributed significant insight for the research study.

Development of Survey Instrument

- Questionnaire for all the eight components of Customer care Activities were prepared on the basis of Literature Review.

- Questionnaire for Service Quality was prepared on the basis of SERVQUAL.

- Questionnaire for Customer Satisfaction was prepared on the basis of Literature Review.

- The questionnaire consists of four sections.
  - ❖ The objective of section I is to understand the general characteristics of the sample, sections II, III, and IV are to measure the three constructs, that is Customer care Activities , Customer Satisfaction, and Service Quality respectively.

- Five-point Likert scale is used for sections II, III and IV .

Pilot Study

- Pilot study was conducted among 45 respondents.

Sample Design

1. **Population of the Study**
    - Mobile telecommunication Customers of BSNL, IDEA, VODAFONE and AIRTEL in Kerala.

2. **Sample Size**

- Rick C. Farr et al. (Rick C & Paul R, 2004)suggests that the researcher never needs more than a few hundred responses – even for a population of one million.

- Crimp et al. (Crimp & Wright, 1995)observed that sample size anything larger than 30 and below 500 is appropriate for the research methods.

- SEM models containing five or fewer constructs, each with more than three items, and with low item communalities require sample size of 300 or more (Hair, Black, Babin, Anderson, & Tatham, 2011)

- Hence the minimum sample size is fixed as 400 and hence 500 responses were collected.

SAMPLE DETAILS

	RURAL	URBAN	TOTAL
BSNL	49	62	111
IDEA	46	58	104
VODAFONE	47	59	106
AIRTEL	43	59	102
TOTAL	185	238	423

Sampling Technique

- Stratified Multistage Random Sampling is used.
- 3 Municipal Corporations and 9 Municipalities are selected for Urban Stratum. (3x3x10 and 9x2x10 equals 270)
- 23 Gramapanchayaths are selected for Rural Stratum. (23x1x10 equals 230).
- Urban 32 missing values. Hence 270-32= 238.
- Rural 45 missing values. Hence 230-45 = 185.
- Hence total sample customers is 238+185=423.

Data-Collection Procedure

- Personally administered structured questionnaire

- 500 customers were approached & 423 valid and completely responded samples are selected for the analysis .

Data Analysis and Interpretation

Testing of Validity and Reliability

Confirmatory Factor Analysis (CFA)

All the four types of Construct Validity has been checked.

1. Convergent Validity Analysis.
2. Discriminant validity.
3. Nomological Validity.
4. Face Validity.

Hypothesis Testing

Ha(1): The customer care activities provided by the mobile telecommunication service providers in Kerala are in a better provision"

All the eight components of customer care activities in mobile telecommunication sector are in better positions. The mean value ranging from 3.47 to 3.75.

Hence **Ha(1): The customer care activities provided by the mobile telecommunication service providers in Kerala are in a better provision"** stands Accepted .

Service Provisioning

Service Provider	SD		D		U		A		SA		Total Samples	Mean	Standard Deviation
	F	%	F	%	F	%	F	%	F	%			
BSNL	10	9.0	13	11.7	36	32.4	27	24.3	25	22.5	111	3.4	1.216
IDEA	0	0	5	4.8	24	23.1	36	34.6	39	37.5	104	4.05	0.896
VODAFONE	0	0	17	16.0	46	43.4	38	35.8	5	4.7	106	3.29	0.792
AIRTEL	0	0	0	0	9	8.8	51	50.0	42	41.2	102	4.32	0.632
Total	10	2.4	35	8.3	115	27.2	152	36.0	111	26.2	423	3.75	1.010

Hypothesis Testing

Ha(2): There is significant difference in the customer care activities provided by BSNL and the private sector mobile telecommunication service providers in Kerala.

ANOVA Test is conducted for all the eight variables and found that there is significant difference between BSNL and private mobile telecommunication service providers in all the eight variables .

Hence the hypothesis **Ha(2): "There is significant difference in the customer care activities provided by BSNL and the private sector mobile telecommunication service providers in Kerala."** stands Accepted.

Service Provisioning- ANOVA

	ANOVA				
	Sum of Squares	df	Mean Squares	F	Sig.
Between Service Providers	78.855	3	26.285	31.326	.000
Within Service Provider	351.576	419	.839		
Total	430.430	422			

Tukey HSD

Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	-.652*	.125	.000	-.97	-.33
	VODAFONE	.104	.124	.838	-.22	.42
	AIRTEL	-.927*	.126	.000	-1.25	-.60

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Hypothesis Testing

Ha(3): There is significant difference in the customer care activities provided by the mobile telecommunication service providers in Rural and Urban areas of Kerala.

t- Test is conducted for all the eight variables and found that there is significant difference in five activities. Hence there is significant difference in the customer care activities provided by the mobile telecommunication service providers in Rural and Urban areas

Hence the hypothesis **Ha(3): "There is significant difference in the customer care activities provided by the mobile telecommunication service providers in Rural and Urban areas of Kerala."** stands Accepted.

Service Provisioning – Rural Vs Urban

Group Statistics	Locality	N	Mean	Std. Deviation	Std. Error Mean
SP	Rural	185	3.60	1.143	.084
	Urban	238	3.87	.877	.057

	t-test for Equality of Means						
SP	t	df	Sig. (2-tailed)	Mean difference	Std error difference	95% Confidence Interval of the Difference lower	upper
	-2.790	421	.006	-.274	.098	-.467	-.081

Hypothesis Testing

Ha(4): There is significant difference in the customer care activities provided by BSNL and private mobile telecommunication service providers in Rural areas of Kerala.

ANOVA Test is conducted for all the eight variables and found that there is significant difference between BSNL and private mobile telecommunication service providers in all the eight variables .

Hence the hypothesis **Ha(4): There is significant difference in the customer care activities provided by BSNL and private mobile telecommunication service providers in Rural areas of Kerala."** stands Accepted.

ANOVA –Service Provisioning Rural

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
SP	Between Service Providers	62.105	3	20.702	21.016	.000
	Within Service Provider	178.295	181	.985		
	Total	240.400	184			

☐						
Tukey HSD						
Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	-1.077*	.204	.000	-1.61	-.55
	VODAFONE	.269	.203	.547	-2.6	.79
	AIRTEL	-.933*	.207	.000	-1.47	-.39

Hypothesis Testing

Ha(5): There is significant difference in the customer care activities provided by BSNL and private mobile telecommunication service providers in Urban areas of Kerala.

ANOVA Test is conducted for all the eight variables and found that there is significant difference between BSNL and private mobile telecommunication service providers in all the eight variables .

Hence the hypothesis **Ha(4): There is significant difference in the customer care activities provided by BSNL and private mobile telecommunication service providers in Urban areas of Kerala."** stands Accepted.

ANOVA –Service Provisioning Urban

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
SP	Between SPs	31.872	3	10.624	16.535	.000
	Within SPs	150.346	234	.643		
	Total	182.218	237			

Multiple Comparisons						
Tukey HSD						
Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	-.315	.146	.141	-.69	.06
	VODAFONE	-.029	.146	.997	-.41	.35
	AIRTEL	-.910*	.146	.000	-1.29	-.53

Hypothesis Testing

Ha(6): The Service Quality provided by the mobile telecommunication service providers in Kerala are in a better provision"

All the eight components of customer care activities in mobile telecommunication sector are in better positions. The mean value ranging from 3.44 to 3.75.

Hence **Ha(6): The Service Quality provided by the mobile telecommunication service providers in Kerala are in a better provision"** stands Accepted .

Tangibility

Service Provider	SD		D		U		A		SA		Total Samples	Mean	SD
	F	%	F	%	F	%	F	%	F	%			
BSNL	7	6.3	14	12.6	44	39.6	33	29.7	13	11.7	111	3.28	1.037
IDEA	0	0	9	8.7	22	21.2	38	36.5	35	33.7	104	3.95	0.949
VODAFONE	0	0	23	21.7	37	34.9	44	41.5	2	1.9	106	3.24	0.811
AIRTEL	0	0	9	8.8	29	28.4	33	32.4	31	30.4	102	3.84	0.962
TOTAL	7	1.7	55	13.0	132	31.2	148	35.0	81	19.1	423	3.57	0.995

Hypothesis Testing

Ha(7): There is significant difference in the Service Quality provided by BSNL and the private sector mobile telecommunication service providers in Kerala.

ANOVA Test is conducted for all the five variables and found that there is significant difference between BSNL and private mobile telecommunication service providers in all the five variables .

Hence the hypothesis **Ha(7): "There is significant difference in the Service Quality provided by BSNL and the private sector mobile telecommunication service providers in Kerala."** stands Accepted.

Tangibility-ANOVA

ANOVA					
	Sum of Squares	df	Mean Squares	F	Sig.
Between Service Provider	43.997	3	14.666	16.444	.000
Within Service Provider	373.696	419	.892		
Total	430.430	422			

Multiple Comparisons

Tukey HSD

Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	-.673*	.129	.000	-1.01	-.34
	VODAFONE	.043	.128	.987	-.29	.37
	AIRTEL	-.564*	.130	.000	-.90	-.23

Hypothesis Testing

Ha(8): There is significant difference in the Service Quality provided by the mobile telecommunication service providers in Rural and Urban areas of Kerala.

t- Test is conducted for all the five variables and found that there is significant difference in five activities. Hence there is significant difference in the customer care activities provided by the mobile telecommunication service providers in Rural and Urban areas

Hence the hypothesis **Ha(8): "There is significant difference in the Service Quality provided by the mobile telecommunication service providers in Rural and Urban areas of Kerala."** stands Accepted.

Tangibility- Rural Vs Urban

Group Statistics					
	Locality	N	Mean	Std. Deviation	Std. Error Mean
SQ_T		185	3.44	1.041	.077	185
		238	3.67	.947	.061	238

	t-test for Equality of Means						
SQ_T	t	df	Sig. (2-tailed)	Mean difference	Std error difference	95% Confidence Interval of the Difference	
						lower	upper
	-2.418	421	.016	-.234	.097	-.425	-.044

Hypothesis Testing

Ha(9): There is significant difference in the Service Quality provided by BSNL and private mobile telecommunication service providers in Rural areas of Kerala.

ANOVA Test is conducted for all the five variables and found that there is significant difference between BSNL and private mobile telecommunication service providers in all the five variables .

Hence the hypothesis **Ha(9): There is significant difference in the Service Quality provided by BSNL and private mobile telecommunication service providers in Rural areas of Kerala."** stands Accepted.

ANOVA – Tangibility Rural

ANOVA					
	Sum of Squares	df	Mean Squares	F	Sig.
Between Service Providers	78.641	3	26.214	39.246	.000
Within Service Provider	120.894	181	.668		
Total	199.535	184			

Multiple Comparisons

Tukey HSD

Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	-1.374*	.168	.000	-1.81	-.94
	VODAFONE	-.159	.167	.776	-.59	.27
	AIRTEL	-1.382*	.171	.000	-1.82	-.94

Hypothesis Testing

Ha(10): There is significant difference in the Service Quality provided by BSNL and private mobile telecommunication service providers in Urban areas of Kerala.

ANOVA Test is conducted for all the five variables and found that there is significant difference between BSNL and private mobile telecommunication service providers in all the five variables .

Hence the hypothesis **Ha(10): There is significant difference in the Service Quality provided by BSNL and private mobile telecommunication service providers in Urban areas of Kerala."** stands Accepted.

ANOVA –Tangibility Urban

<table>
<tr><td colspan="7" align="center">ANOVA</td></tr>
<tr><td></td><td></td><td>Sum of Squares</td><td>df</td><td>Mean Square</td><td>F</td><td>Sig.</td></tr>
<tr><td rowspan="3">SQ_T</td><td>Between Groups</td><td>3.116</td><td>3</td><td>1.039</td><td>1.161</td><td>.325</td></tr>
<tr><td>Within Groups</td><td>209.321</td><td>234</td><td>.895</td><td></td><td></td></tr>
<tr><td>Total</td><td>212.437</td><td>237</td><td></td><td></td><td></td></tr>
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Hypothesis Testing

Ha(11): The customer satisfaction in the mobile telecommunication service sector in Kerala is in a better provision"

All the eight components of customer care activities in mobile telecommunication sector are in better positions. The mean value ranging from 3.42 to 3.87.

Hence **Ha(11): The customer satisfaction in the mobile telecommunication service sector in Kerala is in a better provision"** stands Accepted .

Customer Satisfaction

Service Provider	SD		D		U		A		SA		Total Samples	Mean	SD
	F	%	F	%	F	%	F	%	F	%			
BSNL	1	0.9	4	3.6	32	28.8	52	46.8	22	19.8	111	3.81	0.826
IDEA	3	2.9	14	13.5	40	38.5	43	41.3	4	3.8	104	3.30	0.858
VODAFONE	3	2.8	17	16.0	43	40.6	39	36.8	4	3.8	106	3.23	0.865
AIRTEL	2	2	13	12.7	33	32.4	49	48.0	5	4.9	102	3.41	0.848
TOTAL	9	2.1	48	11.4	148	35.0	183	43.3	35	8.3	423	3.44	.877

Hypothesis Testing

Ha(12): There is significant difference in the customer satisfaction provided by BSNL and the private sector mobile telecommunication service providers in Kerala.

ANOVA Test is conducted and found that there is significant difference in the customer satisfaction between BSNL and private mobile telecommunication service providers .

Hence the hypothesis **Ha(12): "There is significant difference in the customer satisfaction provided by BSNL and the private sector mobile telecommunication service providers in Kerala."** stands Accepted.

ANOVA- Customer Satisfaction

	ANOVA				
	Sum of Squares	df	Mean Squares	F	Sig.
Between Service Providers	22.272	3	7.424	10.298	.000
Within Service Provider	302.059	419	.721		
Total	324.331	422			

Multiple Comparisons						
Tukey HSD						
Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	.513*	.116	.000	.21	.81
	VODAFONE	.584*	.115	.000	.29	.88
	AIRTEL	.399*	.116	.004	.10	.70

Hypothesis Testing

Ha(13): There is significant difference in the customer satisfaction in the mobile telecommunication service providers in Rural and Urban areas of Kerala.

t- Test is conducted and found that there is no significant difference in the customer satisfaction in the mobile telecommunication service providers in Rural and Urban areas

Hence the hypothesis **Ha(13): "There is significant difference in the customer satisfaction in the mobile telecommunication service providers in Rural and Urban areas of Kerala."** stands Rejected.

Customer Satisfaction – Rural Vs Urban

Group Statistics						
	Locality	N	Mean	Std. Deviation	Std. Error Mean
CSat	Rural	185	3.4405	.82372	.06056
	Urban	238	3.4475	.84217	.05459

	t-test for Equality of Means						
Csat	t	df	Sig. (2-tailed)	Mean difference	Std error difference	95% Confidence Interval of the Difference	
						lower	upper
	-.085	421	.932	-.00694	.08176	-.16765	.15377

Hypothesis Testing

Ha(14): There is significant difference in the customer satisfaction in BSNL and private mobile telecommunication service providers in Rural areas of Kerala.

ANOVA Test is conducted and found that there is significant difference in the customer satisfaction between BSNL and private mobile telecommunication service providers .

Hence the hypothesis **Ha(14): There is significant difference in the customer satisfaction in BSNL and private mobile telecommunication service providers in Rural areas of Kerala."** stands Accepted.

Customer satisfaction in Rural

ANOVA					
	Sum of Squares	df	Mean Squares	F	Sig.
Between Service Providers	7.624	3	2.541	3.535	.016
Within Service Providers	130.138	181	.719		
Total	137.762	184			

Multiple Comparisons						
Tukey HSD						
Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	.538*	.174	.012	.09	.99
	VODAFONE	.415	.173	.082	-.03	.86
	AIRTEL	.290	.177	.361	-.17	.75

Hypothesis Testing

Ha(15): There is significant difference in the customer satisfaction in BSNL and private mobile telecommunication service providers in Urban areas of Kerala.

ANOVA Test is conducted and found that there is significant difference in the customer satisfaction between BSNL and private mobile telecommunication service providers .

Hence the hypothesis **Ha(15): There is significant difference in the customer satisfaction in BSNL and private mobile telecommunication service providers in urban areas of Kerala."** stands Accepted.

Customer satisfaction in Urban

	ANOVA				
	Sum of Squares	df	Mean Squares	F	Sig.
Between Service Providers	16.753	3	5.584	7.695	.000
Within Service Providers	169.802	234	.726		
Total	186.555	237			

Multiple Comparisons						
Tukey HSD						
Service Provider (I)	Service Providers (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BSNL	IDEA	.493*	.156	.009	.09	
	VODAFONE	.719*	.155	.000	.32	
	AIRTEL	.482*	.155	.011	.08	

Structural Model Validation for Hypotheses H16 (a) – H17(a)

Model Fit Summary

Chi-square/DF	Absolute Fit					Incremental Fit			
CMIN/DF (< 5.0)	(p > 0.05)	SRMR (< 0.08)	GFI (> 0.9)	AGFI (> 0.9)	RMSEA (< 0.08)	NFI (> 0.9)	IFI (> 0.9)	TLI (> 0.9)	CFI (> 0.9)
1.178	0.093	0.027	0.963	0.952	0.021	0.965	0.994	0.994	0.994

Source: Primary Data

- Overall fit of the structural model for testing the hypotheses H16(a) and H17(a)are good, with *p* value 0.093 which is greater than the recommended threshold of 0.05

- CMIN/DF value of **1.178**, which is below 5.0

- RMSEA and SRMR are less than 0.08

- GFI, AGFI, NFI, IFI, TLI and CFI are well above the recommended threshold of 0.90

- All these results suggests that the overall fit of the structural model is good

$(\chi 2)$

Hypothesis Testing

Ha(16): The Customer care Activities in Mobile Telecommunication Services in Kerala is positively related with the Customer Satisfaction.
Hypothesis testing is conducted using SEM . Customer care Activities is related to Customer Satisfaction with a standard regression weight of 0.531 at significance level less than 0.001. Hence Customer care Activities in Mobile Telecommunication Services in Kerala is positively related with the Customer Satisfaction

Hence the hypothesis **Ha(12): "There is significant difference in the customer satisfaction provided by BSNL and the private sector mobile telecommunication service providers in Kerala."** stands Accepted.

Customer Care Activities Vs Customer Satisfaction

Hypothesis	Relationship			Standardised path Coefficient	t value	Comments
	Structural Path			Standardised Regression Weight	CR	
H1	Customer Satisfaction	<---	Customer care Activities	0.531		Accepted

***p<0.001

Hypothesis Testing

Ha(17): The Service Quality in Mobile Telecommunication Services in Kerala is positively related with the Customer Satisfaction.

Hypothesis testing is conducted using SEM . Service Quality is related to Customer Satisfaction with a standard regression weight of 0.622 at significance level less than 0.001. Hence Service Quality in Mobile Telecommunication Services in Kerala is positively related with the Customer Satisfaction
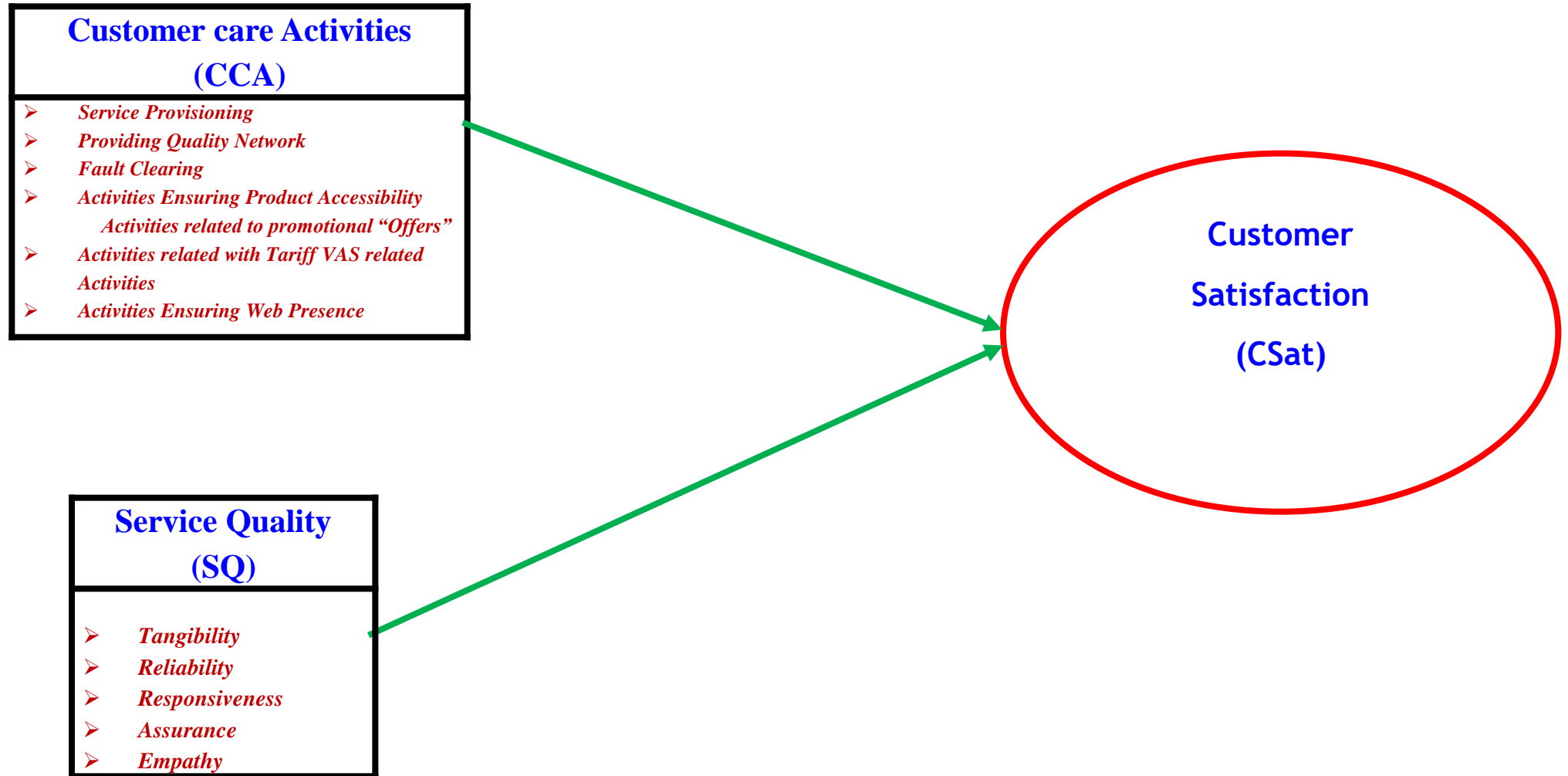
Hence the hypothesis **Ha(17):** The Service Quality in Mobile Telecommunication Services in Kerala is positively related with the Customer Satisfaction." stands Accepted.
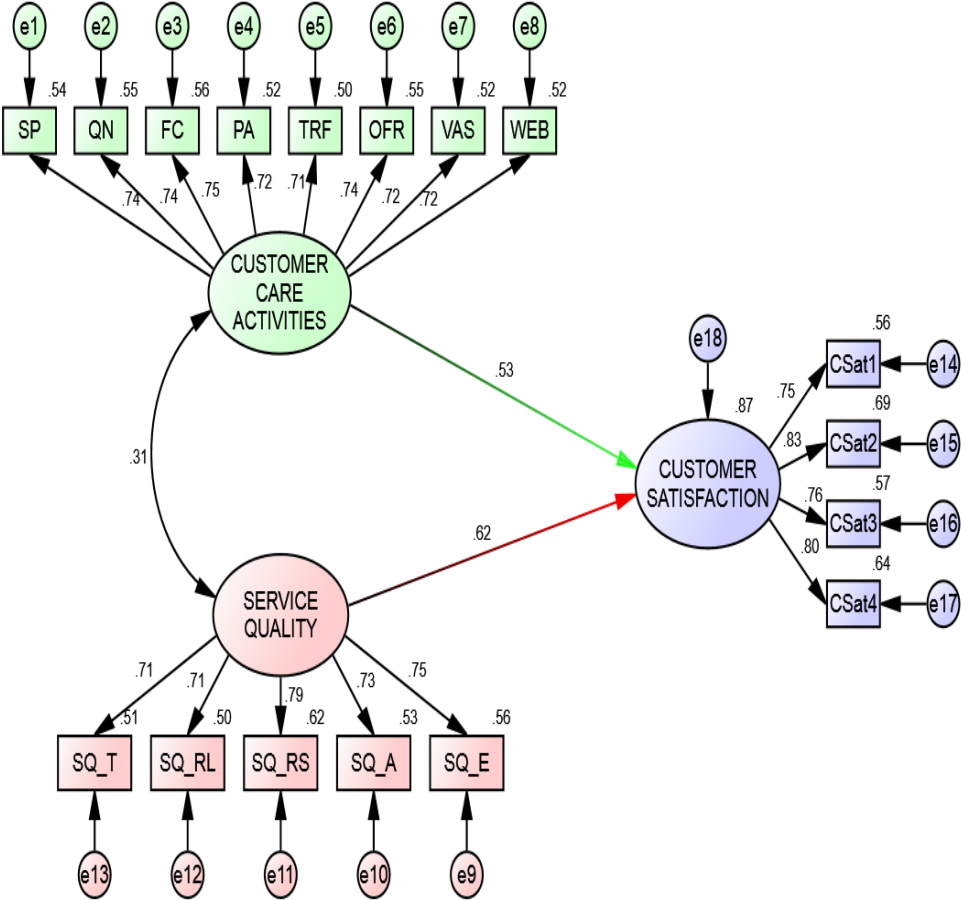
Service Quality Vs Customer Satisfaction

Hypothesis	Relationship			Standardised path Coefficient	t value	Comments
	Structural Path			Standardised Regression Weight	CR	
H2	Customer Satisfaction	<--	Service Quality	0.622		Accepted

***p<0.001*

Proposed Conceptual Model

Customer care Activities (CCA)

- *Service Provisioning*
- *Providing Quality Network*
- *Fault Clearing*
- *Activities Ensuring Product Accessibility*
  - *Activities related to promotional "Offers"*
- *Activities related with Tariff VAS related Activities*
- *Activities Ensuring Web Presence*

Service Quality (SQ)

- *Tangibility*
- *Reliability*
- *Responsiveness*
- *Assurance*
- *Empathy*

Customer Satisfaction (CSat)

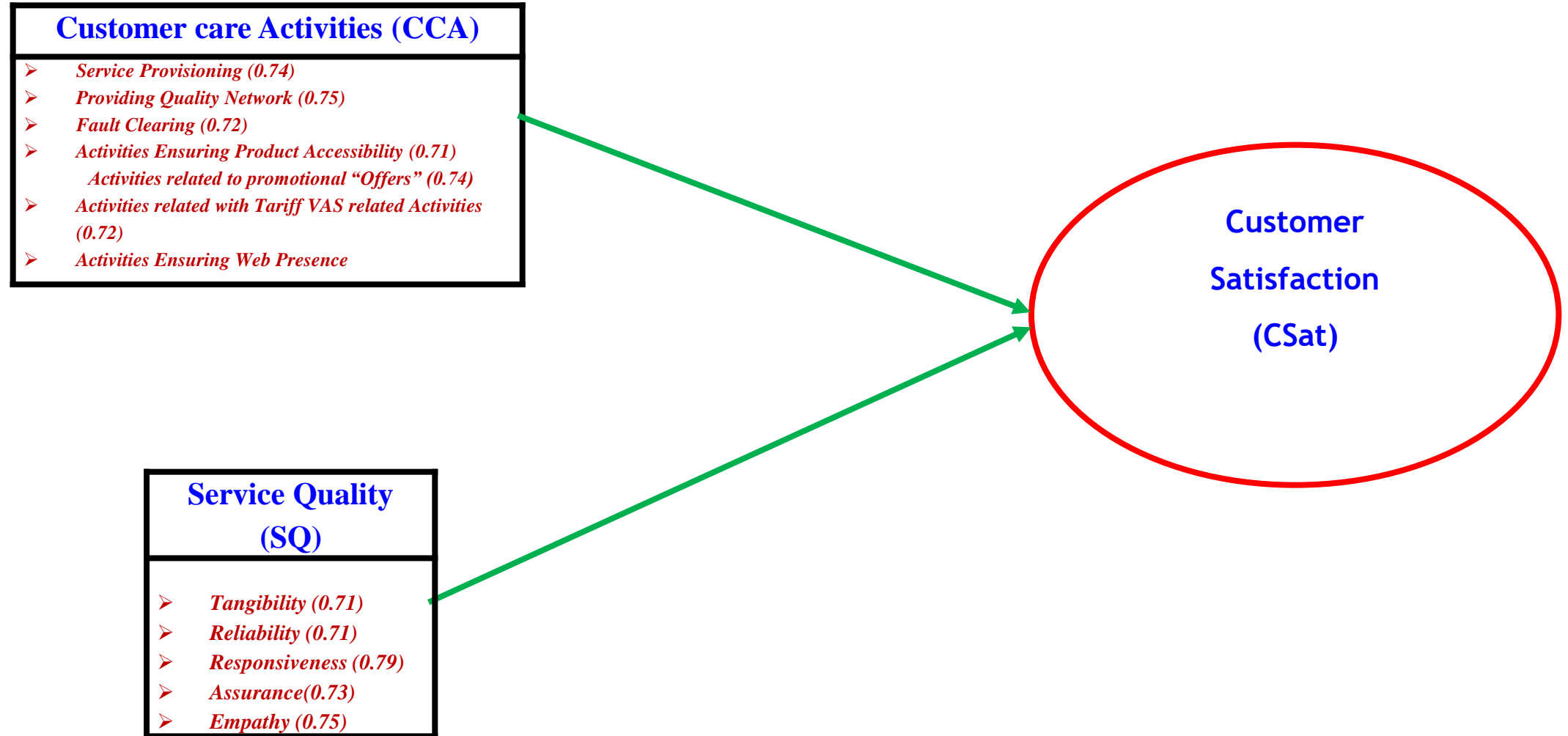# Model Developed using SEM

Chi-square = 136.625
Degrees of freedom = 116
Significance value = .093
Standardized estimates

Proved Model

Customer care Activities (CCA)

- *Service Provisioning (0.74)*
- *Providing Quality Network (0.75)*
- *Fault Clearing (0.72)*
- *Activities Ensuring Product Accessibility (0.71)*
     Activities related to promotional "Offers" (0.74)
- *Activities related with Tariff VAS related Activities (0.72)*
- *Activities Ensuring Web Presence*

Service Quality (SQ)

- *Tangibility (0.71)*
- *Reliability (0.71)*
- *Responsiveness (0.79)*
- *Assurance(0.73)*
- *Empathy (0.75)*

Customer Satisfaction (CSat)

Findings

1. The Customer care Activities provided by Mobile Telecommunication Service Providers in Kerala is in a better position .
2. There is significant difference between the Customer care Activities provided by BSNL and private Mobile Telecommunication Service Providers in   Kerala.
3. There is significant difference between the Customer care Activities provided by the Mobile Telecommunication Service providers in rural and urban sectors of Kerala and better in urban areas than in rural areas.
4. There is significant difference between the Customer care Activities provided by BSNL and private Mobile Telecommunication Service Providers in both Urban and Rural parts of Kerala.
5. The Service Quality provided by Mobile Telecommunication Service Providers in Kerala is in a better position .
6. There is significant difference between the Service Quality provided by BSNL and private Mobile Telecommunication Service Providers in Kerala.
7. There is significant difference between the Service Quality provided by the Mobile Telecommunication Service providers in rural and urban sectors of Kerala and better in urban area than in rural area.

Findings

8. There is significant difference between the Service Quality provided by BSNL and private Mobile Telecommunication Service Providers in both Urban and Rural part of Kerala.

9. The Customer satisfaction in Mobile Telecommunication Service sector in Kerala is in a better position .

10. There is significant difference between the Customer satisfaction provided by BSNL and private Mobile Telecommunication Service Providers in Kerala.

11. There is significant difference between the Customer satisfaction provided by the Mobile Telecommunication Service providers in rural and urban sectors of Kerala.

12. There is no significant difference in Customer satisfaction provided by the Mobile Telecommunication Service providers in urban and rural area.

13. There is significant difference between the Customer satisfaction provided by BSNL and private Mobile Telecommunication Service Providers in both Urban and Rural parts of Kerala.

14. There is significant difference between the Customer satisfaction provided by BSNL and private Mobile Telecommunication Service Providers in Urban part of Kerala.

Suggestions

1. The customer care activities of BSNL are to be improved.

2. Vodafone stands fourth in the customer care activities as well as service quality needs improvement in all the components of Customer care activities and service quality.

3. Attention given to Rural area in Customer care activities can be improved to tap the rural potential- applicable to all companies.

4. The Service Quality of BSNL are to be improved.

 5.   Attention given to Rural area in Service quality can be improved to tap the rural potential- applicable to all companies

6.   The Government PSU BSNL shows better satisfaction levels in both rural and urban areas in spite of the low customer care activities and service quality. Hence on improving customer care activities and service quality customer satisfaction can be improved further.

THANK U...