



“Electronic commerce to Mobile commerce.”

KEYWORDS

M-Commerce, mobile Apps, customer satisfaction, Mobile services

Dr. Veena Angadi

Research Guide Reva University

R. Parvathi

Research Scholar Reva University

Dr Gopala Krishana

Research Co-guide BES Degree Evening College

ABSTRACT

New generation and latest technology is making business easy and found reaching the customer directly through marketing and selling channels via mobile commerce. M-Commerce is the successor of e-Commerce technology. Mobile mode of communication is transforming the wired transaction to wireless transaction and mobile device users are treated as greatest group of potential market of today. Mobile commerce now includes the payment for parking through mobile phone, like wise purchasing washing machine, booking movie tickets, video chatting, instruction from the boss, conferences and so on so forth any where anytime.

Introduction: Till 90s Telecom industry was under monopoly with the Government of India. Later with the unique concept of liberalization, globalization and privatization the entire world participated for the growth of revenue and telecommunication industry. Today's generation has seen high growth in Indian Telecommunication industry. TRAI, The telecom Regulatory Authority of India established in 1997 which is the independent regulatory body established by the government of India to regulate its policies.

Mobile commerce was originally coined in 1997 to mean "the delivery of electronic commerce capabilities directly into the consumers hand anywhere via wireless technology. M-commerce gives platform to connect the customers globally as well as instantly.

M-commerce is about the explosion of applications and services that are becoming accessible from internet enabled mobile devices. It involves new technologies, services & business models. It is quite unique and easy from traditional E-Commerce.

The Global Mobile commerce forum which came to include over 100 organizations and launch in London on 10th November 1997. Kevin Duffey is the elected executive chairman of the GSM Association. It was initiated by the group of telecom directors of logical and virgin mobile and then of orange, within a year span of time 100 companies joined the forum. Many companies formed mobile commerce teams on their own like master card and Motorola are one among them later member organizations such as Nokia, Apple, Alcatel and Vodafone began a series of ties and collaboration.

Purpose of the study: The purpose of the study is to know the customer satisfaction through their attitude in using the various mobile services which are classified as basic Mobile services and use of mobile Apps in order to understand the service satisfaction.

Importance of the study: Attempt to explore modern and easy way of availing the goods and services through businessmen.

Objective of the study:

- To study the Customer reliability on mobile services while connecting globally through M-Commerce specific Apps provided by the Airtel and BSNL network.
- To Find out the association of M-Commerce Apps in Specific - OLX, Flipkart, Amazon, EBay and big basket on Customer Satisfaction provided by Airtel and BSNL network.

Limitations of the study: The result of the study is based on the

sample survey conducted on Mobile Subscribers of 1000 samples, 500 from BSNL subscribers and 500 from Airtel subscribers, though the mobile network penetration of Airtel is more than the BSNL network subscriber both are given equal importance so that researcher could do justification in comparative study.

Scope of the study:

- To conduct this research the target population was the Mobile service users who are in GSM technology users. Respondents are internet savvies.
- Geographical area targeted was South Bangalore city of Karnataka state with sample size of 1000 Mobile service users. Mobile Subscribers from Airtel and BSNL network considered equally that is 500 respondents from each network.

Review of Literatures: Research done by M.Sathish, K.Santhosh Kumar and V.Jeevanantham (2011) represents the customer will not only look at the call rates but also consider the other services provided by the service provider like network coverage, value added service, Consumer care and advertisement. It is found that there is a relation between switching the service provider and the factors (Customer service, service problem, usage cost, etc.). After analyzing the findings of the study, researchers suggest that cellular service providers concentrate more on increasing network stability and setting tariff rates competitively. The findings also suggest that managers of these mobile operators should shift focus on building corporate goodwill and try to know the reason for consumers to switch brands in this industry in order to increase loyalty among these consumers. Hypothesis tested in the research was on the factors are random and are independent of each other. Factors here are the call rates and the value added services.

Research Gap: Study is taken on survey method projecting the overall requirement of the mobile phone to any consumer and their reaction through consumer satisfaction.

Research Methodology: The descriptive research methodology was applied. The method allowed for the assessment of customer satisfaction of mobile services of mobile telecom service brand. This research study is taken up through a survey.

Sources of data: The primary data collected from the respondents who are Mobile friendly. Based on the scope and objective of the study, Interview schedule/Questionnaire is prepared to collect the response and opinion from the Mobile service users. Secondary data collected through e-Journals, Magazines, Internet, Books, Journals, news papers and Digital Media.

Sampling Methodology:

Sampling size: 1000 respondents of South Bangalore City of Karnataka State.

Sample unit: Customers using mobile phone services through service (Government employee), Businessmen, students and others (other categories of profession including home maker), who are using Mobile Services and Mobile Apps in South Bangalore City of Karnataka State.

Sampling area: South Bangalore city of Karnataka state.

Sampling Technique: Probability Sampling Technique.

Hypothesis: There is no Positive association Between M-Commerce specific Apps and Customer Satisfaction.

Method of Analyzing the data: Correlation and Regression Analysis- Both are generally performed together. Correlation measures the degree of the association between two or more set of variables. Regression on the other hand, is used to explain the variations in one variable usually called the dependent variable - by a set of independent variables. It defines the nature of relationship. The number of independent variables in regression analysis could be one or more. In case of one independent variable, we classify it as a simple regression, where as in case of more than one independent variable, it is called a multiple regression analysis. Here Education of the respondents and the mobile bill amount spent on mobile services are assessed with Correlation and Regression analysis.

Cronbach's alpha is the most common tool used to know the internal consistency that is reliability of the data. It is used when there are multiple questions in a survey questionnaire which forms a scale and determine whether the scale is reliable or not. Cronbach's alpha is applied which six questions of faults while choosing any mobile network like Barathi Airtel and Bharat Sanchar Nigam Limited Network. Scale measure between 1 to 5 points. 1 represents strongly agree and 5 represents strongly disagree.

Research Hypothesis with p-value and results

Hypothesis	Pearson chi-square value	df	p-value	Results
There is no positive association between factors of mobile phone service and Mobile network.	2.403a	4	0.662	Accept
There is no positive association between 3 G ready and Mobile network.	1.176a	1	0.278	Accept

To analyze the underlying consumer satisfaction and preference in choosing the mobile network, this research has tried to reach 1000 respondents and collected the information regarding their decision which indicates the degree of agree with the following statements using 5 point scale 0= Strongly disagree, 4= Strongly agree.

Few bench marks are fixed by the TRAI like service activation should do be done within 3hours assuring 95% accuracy, 85% to 95% successful transmission in data, 90% speed in data packet, call drop rate less than 2% and so on to attend the utmost satisfaction to consumer taste and preference in any network. Here researcher has tried to know the faults countered to mobile consumers in spite of the TRAI bench marks, here factor analysis is applied to know the underlying factors.

The results of the factor analysis is explained as under based on the Preference of respondents from Airtel and BSNL network subscribers.

I prefer Network coverage.

- I prefer Fair Pricing
- I prefer Quality service
- I prefer attractive schemes
- I prefer overall performance

Correlation Matrix on Mobile service faults

Correlation	Excessive Billing	Poor Network coverage	Poor customer care	Excessive call drops	Limited services
Excessive Billing	1.000	0.630	-0.494	-0.161	-0.161
Poor network coverage	0.630	1.000	-0.047	0.338	0.338
Poor customer care	-0.494	-0.047	1.000	0.515	0.515
Excessive call drops	0.074	0.117	0.195	0.829	0.829
Limited services	-0.161	0.338	0.515	1.000	1.000

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.194
	Approx. Chi-Square	5660.275
Bartlett's Test of Sphericity	df	10
	Sig.	0.000

It may be observed that the value of KMO statistics is higher than 0.5, this indicates that factor analysis could be applied for the given set of data. Next to KMO, Bartlett's test of sphericity testing for the significance of the correlation matrix significant as indicated by the p value corresponding the Chi-Square statistic. The p value is 0.000, which is less than 0.05, the assumed level of significance, indicating the rejection of the hypothesis that the correlation matrix of the variables is insignificant. It may be observed that sample size 1000 is more than the number of variables. These are justification for factor analysis.

KMO test: Test the suitability of factor analysis, which measure varies between 0 and 1 and values to 1 are better.

Bartlett test of sphericity : This is the one of the statistical test for overall significance of the correlation within its correlation matrix . Sig: gives p-value which is 0 less than 0.05 here. Hence there is a significant correlation among the variables.

Mobile Service faults Communalities

	Initial	Extraction
Excessive Billing	1.000	0.894
Poor network coverage	1.000	0.738
Poor customer care	1.000	0.642
Excessive call drops	1.000	0.726
Limited services	1.000	0.969

Extraction Method: Principal Component Analysis. Communalities: The variance of each variable is standardized to unity and divided into two section. Communality + Specific variance = 1. Hence, as a result communality cannot be more than 1. Communality exists as there is a correlation among variables. In this research principal component method is applied for extracting communalities.

Correlation Matrix on Mobile service faults

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.160	43.194	43.194	2.160	43.194	43.194	2.152	43.046	43.046
2	1.810	36.205	79.399	1.810	36.205	79.399	1.818	36.353	79.399
3	0.757	15.133	94.533						

4	0.269	5.382	99.914						
5	0.004	0.086	100.000						

Extraction Method: Principal Component Analysis. Total Variance: In this research principal component (PC) method of factor analysis is applied and here principal component method, factors and number of variables will be same in factor analysis. However, not all five factors will be retained. Number of factors of Eigenvalue method is applied and as a result number of Eigenvalue or factors of correlation matrix more than 1 are only two are found here. Two factors explains a total 79.399% of the variance, while the percentage of variation in first factor is 43.046 percent.

Extraction sums of squared loading : The number of rows of the table corresponding to the number of factor retained. calculation is done in the same way and the computed values may be smaller.

Rotation sums of squared loading: The matrix of factor loading is rotated orthogonally using Varimax rotation. total amount of variance accounted for its redistribution over the two extracted factors

Component Matrix ^a	Component	
	1	2
Excessive Billing	-0.264	0.908
Poor network coverage	0.194	0.837
Poor customer care	0.672	-0.436
Excessive call drops	0.810	0.264
Limited services	0.971	0.162

Extraction Method: Principal Component Analysis^a
a. 2 components extracted.

In the above component matrix, the elements of the matrix e called factor loading. The Correlation coefficient between first variable namely, Excessive Billing and factor 1 is -.264. Similarly, the correlation coefficient between factor 2 and the variable 3, namely, poor network coverage is 0.194. The factor loadings could be used to compute Eigenvalues for each factor.

Rotated Component Matrix^a

	Component	
	1	2
Excessive Billing	-0.129	0.937
Poor network coverage	0.314	0.800
Poor customer care	0.602	-0.529
Excessive call drops	0.840	0.143
Limited services	0.984	0.018

Rotated component matrix represents the rotated factor loading which are the correlation between variable and the factors. There is no hard and fast rule to decide the cut-off point, but generally considered above 0.5. Now using 0.7 as cut-off point, the two variables corresponding to factor 1 having a factor loading above 0.7 are Limited services and Excessive Call drops. The variables corresponding to factor 2 for factor loading are greater than 0.7 is Excessive billing and

poor network coverage. Here we could observe that the variable appears in one factor does not appear in the other variable.

Component Score Coefficient Matrix	Component	
	1	2
Excessive Billing	-0.048	0.514
Poor network coverage	0.156	0.444
Poor customer care	0.273	-0.283
Excessive call drops	0.392	0.089
Limited services	0.458	0.023

Component	1	2
1	0.989	-0.146
2	0.146	0.989

Table No
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. Component factor coefficient matrix which represents the scores of each observation on the underlying factors which are used to represent each factor

As explained earlier, based on the correlation between the original variables, researcher has tried to explain the variance between common factors. Based on the component score coefficients , researcher able to obtain the factor scores for the extracted factors. The Above table represents the *Component Score Coefficient Matrix*, which extracts the two factors scores from the table.

Hence with the above results, it is to conclude the null hypothesis There is no Positive association Between Customer Service Parameter and Customer Satisfaction " is rejected and alternate hypothesis There is Positive association Between Customer Service Parameter and Customer Satisfaction." is accepted.

Findings: The Mobile gadget plays a very important and major role in using of Mobile services and mobile apps in Mobile commerce, like any other country India is also well versed with many brands of Mobile handsets which also includes fake brands generally it is called as china product in local language. Hence out of hundreds of Brands of Mobile, researcher has considered five particular brands like Nokia, Motorola, L.G, Sony, Apple Iphone, and 6th brand considered as others which includes Samsung, Blackberry, Panasonic, Reliance, so on so forth including local brands. Here researcher focus is on the impact of Mobile hand set on choosing Mobile Network among the BSNL and Airtel. The biggest brand from the study was Nokia with 18.2% of the respondents using Nokia Mobile handsets out of which all most all students use this handset along with low income group due to cost effective. This was followed by Iphone(17.4%), Samsung (17.2%), Motorola (16%), LG (11.8), and Others(19.4%). The response of the respondent is clearly states about non relationship between the networks and Mobile handset. However, ever Mobile handset will serve the purpose by providing the basic Mobile services as stated in the research methodology but to down load General Mobile Apps and specific Mobile Apps certain technical and software compatibility is required to Mobile handset which shall be take care by the manufacturer time to time as the consumer taste and preference varies, else if the question of survival in the market. Under Airtel network Iphone is more popular and Samsung under BSNL

Conclusion : This thesis has taken an encompassing approach to identifying the pivotal factors for converting a Smartphone in personalized, an interactive and value-creating manner through any brand of Mobile device or Mobile network', used by the consumer not only towards the basic utilization of mobile phone but also to know their reaction towards General Applications considering the Social network and Mobile Commerce Application to make consumers inclination towards the business transactions and also acceptance of Value Added Services. Hence it is an effort to know the consumer reaction towards overall performance and utility of the mobile phone in general and Airtel and BSNL network in particular.

References:

1. Henry Chan, Raymod Lee and etl., E-Commerce Fundamental and Applications., Wiley.
2. K. K. Bajaj, D. Nag. E-Commerce., 2nd Edition, McGraw Hill Education, New Delhi
3. Bhaskar Bharat., Electronic Commerce-Technology and Application., McGraw Hill Education, New Delhi.
4. Education, New Delhi.
5. Donald R. Cooper & Pamela S. Schinder (Tata Mcgra Hill 2003) Business Research Methods".
6. Mobilepaymentstoday.Comarticle
7. Articles.Economicstimes.Indiatimes.Com
8. Airtelworld.Com