

# Customer Satisfaction in Mobile VAS and Importance of VAS - M - Commerce

Dr. Veena Angadi<sup>1</sup> R. Parvathi<sup>2</sup> Dr. Gopala Krishana<sup>3</sup>

<sup>1</sup>Research Guide <sup>2</sup>Research Scholar <sup>3</sup>Research Co-guide

<sup>1,2</sup>Reva University <sup>3</sup>BES Degree Evening College

**Abstract**— Vibrant Business Scenario of the Indian economy is growing at a faster rate thanks to liberalization, globalization and privatization. Every Business Entity is competing with each other in order to maximize their revenue. In the process every Business concern is compelled to cope up with financial pressure customer loyalty and satisfaction. Competition is not only with prices of any products, but also with accessibility to customer with in no time. In this back drop M-Commerce gives raises to a new platform to Business concerns to approach the customer with utmost Preferential Products to consumer satisfaction. Communication has been playing a important role in man's life from time immemorial inventions like radio, television, telephone and computer made a tremendous in the world.

**Key words:** Mobile Commerce, VAS, Customer & Satisfaction

## I. INTRODUCTION

Consumers today lead an increasingly fast-paced life and demand smaller, better, faster, and more reliable wireless technology to keep up with their lifestyles. M-Commerce is the solution to this demand because it makes traditional E-Commerce tasks available to be performed wirelessly through a cell phone. While cell phone companies are upgrading networks to the 3G standard, providing adequate coverage in major metropolitan areas, and providing consumers with content technology. Every analyst or scholars has depicted the definition of M-Commerce which gives a wide meaning as its service states. This research would like to define mobile commerce as "Master mind commerce " which makes consumer comfortable & timeless efforts.

- Mobile device and players in Mobile commerce: Mobile Device: Samsung, iPhone, BSNL, Nokia, L.G, Motorola etc. There is no conditions in this research to use particular brand of Mobile device by the consumers who are captured through the survey method randomly.
- Users: Customer or Consumer who are captured in this research are Mobile Device users. Respondents are the Airtel and BSNL network service users using Basic Mobile services and selected Mobile apps in general and Specific,
- Network Operators: Airtel, BSNL, Vodafone, Reliance, Aircel etc. Airtel and BSNL network service providers are under study in this research. Airtel is the Private network service provider and BSNL is the government governed mobile network service provider.
- Service Provider: Amazon, Flipkart, e-bay, OLX, Bigbasket, Whatsapp, YouTube, Facebook etc. these are the popular apps used in general and specific to study M-Commerce application in the research.

- Financial Institution: Vysya bank, Vijaya Bank, State Bank of India, State Bank of Mysore, National Bank etc. Every business organization should be associated with a banker to complete business transaction, hence in M-Commerce financial institution has to be linked to complete the business cycle apart from using a particular M-Commerce apps

### A. Mobile Payment Players

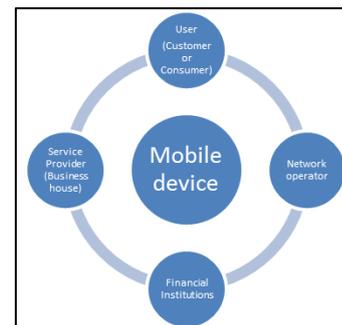


Fig. 1: Mobile Payment Players

## II. PURPOSE OF THE STUDY

Before wires and virtual networks transmitted communications, there were smoke signals, drums and carrier pigeons. Fortunately, technology has come a long way since then to the point where it's impossible to overstate the significance of telecommunications technology to any business, especially as it relates to growing the capacity of small businesses. From telephones, facsimile, television, Internet and the vast array of private networks, telecommunications technology is like your firm's central nervous system. This shows how global networking is getting faster rate with the customer and satisfaction connecting the article to VAS.

## III. IMPORTANCE OF THE STUDY

- To discover the new perception of Business through M-Commerce.
- Adoption of VAS by customer with preference and satisfaction.
- VAS Services available through M-Commerce.

## IV. OBJECTIVE OF THE STUDY

- Main: Comparative study towards Value Added Services provided by the Airtel and BSNL network.
- Sub Objective: To find out the association of usage of Internet, Mobile banking, E-Mail-Chat, Entertainment and Roaming facilities on Customer Satisfaction provided by Airtel and BSNL network.

#### A. Limitations of the Study

- 1) Selected Customer preference and reaction towards BSNL and Airtel network during research period.
- 2) The geographical area of the study is restricted to South Bangalore city of Karnataka state.

#### B. Scope of the Study

- Survey has been done with questionnaire containing both open-end and closed ended questions considering five selected Basic Mobile services and VAS,
- Only attitude of consumer using Mobile, Mobile basic services and VAS of Airtel and BSNL network service providers are recorded as customer satisfaction.
- End of the survey, the data so collected has been analyzed, compared to give accurate conclusion and recommendations data collected from the respondents view.

### V. REVIEW OF LITERATURES

A study of adoption behavior of mobile banking services by Indian consumers by Nitin Nayak, Vikas Nath & Nancy Goel, 2014 had discussed about the recent innovations in the telecommunication which has proved to be a boon for the banking sector and its customers. In the article the researcher has briefed about the Mobile Banking, where customers interact with the bank via mobile phones and banks provide them the various services like short message services, fund transfers, account details, issue of cheque book etc.

Mobile and mobile commerce in India emerging issues (Dr. Sunil Batra & Dr Neenu Juneja 2013). M-Commerce driving the E-Commerce revolution in India (Manisha bapna 2013). Ten reasons why mobile commerce in India may get bigger than online commerce (Sugandha Dhawan 2013).

#### A. 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. To focus on the objectives of the research, five popular and needful five Value Added Services are considered to present the importance of the Mobile Phone and its services on an Whole. This research is based on the Consumer reaction in general but Restricted to Airtel and BSNL network Subscribers in Particular to South Bangalore city of Karnataka State considering 1000 respondents randomly, 500 respondents are Airtel Network Subscribers and 500 respondents are BSNL Network subscribers which may not be considered by the many researchers in the past.

### VI. RESEARCH METHODOLOGY

#### A. Sources of Data

This study is conducted based on goals set. For this research both primary and secondary data are used. The primary data collected from the respondents who are mobile friendly and the secondary data collected through e-Journals, Magazines, Internet, Books and Digital Media. Based on the scope and objective of the study, Interview schedule/Questionnaire is prepared to collect the response and from the mobile (Customer).

The respondents comprises of Executives, Housewife, Doctors, lawyers, administrators and students who are used to buy goods through electronic medium (Mobile).

Random sampling method is adopted to collect the response from the respondent. The sampling size is 1000 mobile customers of above profession. The sample is drawn from the total population of south Bangalore city of Karnataka state.

In order to know the Bangalorean respondent's attitudes & their intention to use M-Commerce a survey was administered through personal interview. On the basis of review of literature the questionnaire for the research was designed and pilot testing was done with a sample of 28 postgraduate's commerce students. Few modifications in terminology of statements & Clarity were carried out after pilot study.

Data has been gathered through the primary & secondary data collection strategies. Secondary information is gathered through the information already available with the help of efforts of others. Information collected from published National & International articles and literature is also verified and collected the abstracts. Company profile and Broachers especially Airtel Companies and few service providers like Vodafone, idea, BSNL to do comparative study. Information also gathered from commercial service office, Internet, Books, Journals and newspapers.

Primary data is collected based on the simple questionnaire. The questionnaire provided a brief description of mobile commerce and customer satisfaction so that respondents are informed about this concept. The questionnaire used in this research was grouped in four parts. The first part reflected on the demographic information showing Customers name, age, sex, qualification, Income and profession\employment. The second part of the questionnaire addressed to the mobile hand set used and the services opted by the customers, reasons and other related knowledge. The third part of the questionnaire was related to customer satisfaction and preference based on the quality of electronic handsets and mobile service provided by the service provider and operating system used. Similarly the forth part was related to customer opinion on services and quality of services. Here customers are given open-end choice to express the unimaginable service expected by them from the service provider and also suitable suggestion to improve the services to service provider.

#### B. Sources of Data

This study is conducted based on goals set. For this research both primary and secondary data are used. The primary data collected from the respondents who are mobile friendly and the secondary data collected through e-Journals, Magazines, Internet, Books and Digital Media. Based on the scope and objective of the study, Interview schedule/Questionnaire is prepared to collect the response and from the mobile (Customer).

#### C. Sampling Methodology

Random sampling method is adopted to collect the response from the respondent. The sampling size is 1000 mobile customers of various selected profession. The sample is

drawn from the total population of south Bangalore city of Karnataka state among the Airtel and BSNL subscribers.

- 1) Sampling size 1000 respondents of Airtel and BSNL subscribers
- 2) Sample unit: Customers using mobile phone services like Executives, housewives, business man, professors and students
- 3) Sampling area: South Bangalore city of Karnataka State.

**D. Sampling Technique**

- Average.
- Standard deviation and Variance.
- Correlation Co-efficient.

Factors	Cronbach's Alpha based on Standardized	Cronbach's Alpha	Mean	Variance	Std. Deviation	Results
Value Added Services	0.952	0.952	5.4060	2.067	1.43779	Accept

Table 1: Statistics

The mean and the standard deviation of a collected data are usually reported together, so their results of each constructs are also reported. We can find that while the mean value of behavior intention of various factors are reflected, which means that most respondents seem to agree with using various Mobile services which are classified by the researcher by Airtel and BSNL mobile network. The standard deviation of Airtel and BSNL mobile Network indicates there are many different opinions of respondents for the factors given in South Bangalore City of Karnataka State.

We can see that Cronbach's alpha is higher when compared to Standard in the above factors which indicate a positive level of internal consistence for our scale with 1000 samples of Mobile Service Users of Airtel and BSNL Mobile Service Networks in South Bangalore City of Karnataka State.

Results of Chi-Square with Mobile services and VAS.

Value Added Mobile Services			
Internet	3	0.255	Reject
Mobile Banking	3	0.435	Reject
E-Mail- Chat	3	0.460	Reject
Entertainment	3	0.558	Accept
Roaming Facilities	3	0.109	Reject
Four Value Added Services rejected and one Value Added Service accepted			

Table 2: Results of Chi-Square with Mobile services and VAS

Sl. No	Value Added Services	No of Respondents	Airtel Network	No of Respondents	BSNL Network	Result Airtel or BSNL Network
1.	Internet	466	50.1%	468	49.9%	Airtel network
2.	Mobile Banking	462	49.9%	464	50.1%	BSNL Network
3.	E-Mail & Chat	458	49.57%	466	50.43%	BSNL Network
4.	Roaming facilities	468	50%	468	50%	Both are equal
5.	Entertainment	466	50.65%	454	49.35%	Airtel Network

Table 3: Value Added Services

- Chi- square test.
- Factor Analysis.
- Reliability test.

**E. Hypothesis**

There is no significant association Between Value Added Service and Customer Satisfaction."

**VII. METHOD OF ANALYZING THE DATA**

**A. Reliability Statistics**

Results based on selected research Mobile services to test reliability of data.

The above table project the consumer satisfaction towards selected few popular Value Added services, most of the selected VAS are rejected in the results when compared with and valued with Chi-square test , so it is said null hypothesis " There is no Positive association between Customer Satisfaction and VAS - M-Commerce" is rejected and alternate hypothesis " There is Positive association between. "Customer Satisfaction and VAS-M-Commerce" is accepted. This solution helps to conclude that there is positive association between Customer Satisfaction and Mobile Services and VAS - M-Commerce in South Bangalore City of Karnataka State.

**B. Value Added Services**

The study also contains questions about the advanced mobile services that have emerged because of having Internet on the mobile phone. Respondents were required to express their usage of mobile Internet, search Engines, Email, watch video, view News site, weather forecast, sports results, stock exchange information, mobile Banking, GPRS and mobile payments. For services like mobile Internet browsing, search engine (google) and Email, an average of 43% of the respondents use these services at least once a week. Since the introduction of 3G and 4G mobile technologies, a number of people in the mobile society of Ghana see the mobile Internet as an alternative to going to the internet cafe or other limited access to the Internet. For many people in this society, mobile internet is not a complimentary service, but a substitution to access the internet through the mobile device. Selected Value Added Services

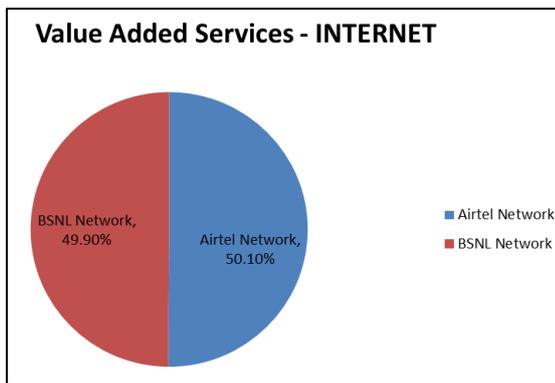


Fig. 2: Respondents reaction on Value Added Service - internet

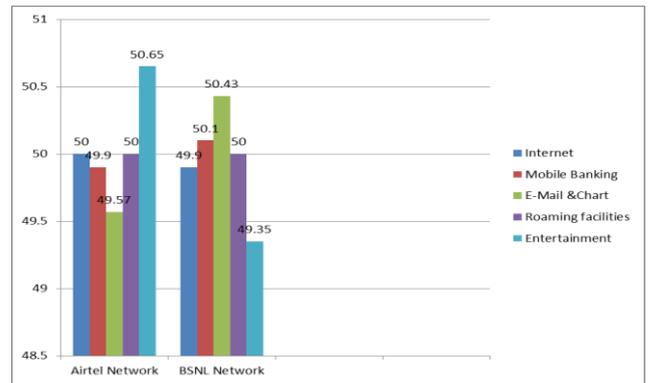


Fig. 3: Reaction of Respondents towards Value Added Services

Value Added Services	Internet	Mobile Banking	Email and Chat	Roaming	Entertainment
Internet	1.000	.791	.787	.761	.754
Mobile Banking	.791	1.000	.838	.832	.806
Email land Chat	.787	.838	1.000	.889	.760
Roaming	.761	.832	.889	1.000	.755
Entertainment	.754	.806	.760	.755	1.000

Table 4: Correlation Matrix on Value Added Services

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.896
Bartlett's Test of Sphericity	Approx. Chi-Square	5221.976
	df	10
	Sig.	0.000

Table 5: KMO and Bartlett's Test - VAS

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 of the variables indicates that the correlation coefficient 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.

Component	Total Variance Explained - VAS					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.191	83.823	83.823	4.191	83.823	83.823
2	0.292	5.840	89.664			
3	0.247	4.943	94.606			
4	0.161	3.213	97.819			
5	0.109	2.181	100.000			

Table 7: Total Variance Explained - VAS

#### D. 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

- 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.

Communalities - VAS		
	Initial	Extraction
Internet	1.000	0.797
Mobile Banking	1.000	0.871
Email and Chat	1.000	0.875
Roaming	1.000	0.859
Entertainment	1.000	0.790

Table 6: Communalities - VAS

#### C. Extraction Method: Principal Component Analysis

Communalities: The variance of each variable is standardized to unity and divided into two sections. 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.

- Eigenvalue or factors of correlation matrix more than 1 is only one are found here. The factor explains a total 83.823% of the variance.
- 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 only one extracted factor.

Component Matrix <sup>a</sup> - VAS	
	Component
	1
Internet	0.893
Mobile Banking	0.933
Email and Chat	0.935
Roaming	0.927
Entertainment	0.889

Table1: Component Matrix<sup>a</sup> - VAS

In the above component matrix, the elements of the matrix is called factor loading. The Correlation coefficient between variable namely, Entertainment and factor 1 is 0.889. Similarly, the correlation coefficient between factor 2 and the variable 3, namely, Internet is 0.893 and roaming is 0.927. The factor loadings could be used to compute Eigenvalues for each factor. Hence the Null hypothesis "There is a no significant association Between Value Added Service and Customer Satisfaction" is rejected and alternate hypothesis "There is a significant association Between Value Added Service and Customer Satisfaction" is accepted

### VIII. FINDINGS

- 75% of consumers strongly agree that mobile is the best device for all most all the activities in their daily life. However 6% of Mobile users responded that there are other devices like tablets, laptops, notes and other devices are also could be used for similar purpose so they disagree mobile as best device
- The preliminary analysis is conducted based on the usage of Value Added Services by the Consumer who are Mobile friendly and the statistics collected to know the respondents usage regularity, by giving the option like use of all Value Added Services regularly, Use one or two Value Added Services and Not interested in using Any Value Added Services by the Airtel and BSNL mobile Network Subscribers. In which Maximum Number of respondents of Airtel and BSNL network subscribers replied to use one of two Value Added Services regularly.

### IX. SUGGESTIONS AND CONCLUSION

This research article presenting customer satisfaction through their reaction towards mobile phone use in South Bangalore City of Karnataka State. This research is based on a survey which is done in South Bangalore City of Karnataka State on BSNL and AIRTEL service providers. Here researcher prepare questionnaire for Mobile service used by the consumers which includes questions regarding VAS. On the basis of information that are filled by customers it is analyzed performance of BSNL and AIRTEL on Customers satisfaction with VAS. after the data analysis of performance it is found that customers are very satisfy with the services which are provided by Barthi AIRTEL network , when compared with the customers of BSNL network users are not satisfied with the services that are provided. It is high time the BSNL network need to be

prepared much more then the customer expectation else the survival of network is the question bothered most though governed and maintained by the Government.

### REFERENCES

- [1] Articles.Economicstimes.Indiatimes.Com
- [2] Google.Com
- [3] India.Com
- [4] Airtel.In
- [5] Trai.Gov.In
- [6] Donald R. Cooper & Pamela S. Schinder (Tata Mcgrah Hill 2003) "Business Research Methods",