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"Mobile Value Added Services": An Empirical Study of Determining Customer Satisfaction

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ABSTRACT

The Mobile Value-Added Services (MVAS) significantly contribute towards non-voice revenuein the Indian telecom sector in India. The MVAS are considered as a differentiating tool, source of revenue, and growth drivers in present time when telecom industry is facing a challenge of reducing voice tariffs. The present study aims at analysing customer's satisfaction towards MVAS. The study identified three major determinants of MVAS viz., m-commerce, m-entertainment, and m-education, which significantly affect customer satisfaction towards MVAS. The collected was analysed using multiple regression in order to predict or study customer satisfaction in MVAS.

Keywords: Mobile Value Added Services, Customer Satisfaction, M-commerce, M-entertainment, M-education

1. INTRODUCTION

The Indian telecom market is one of the fastest growing and second largest market in the world after china. According to the current statistics the number of mobile phones users in India are expected to rise to 730.7 million by the end of 2017. Additionally, the number of smart phone users also are expected to reach 340 million which are expected to reach about 468 million by 2021 (Statistica 2017). Due to the intense competition among the telecom service providers in the country, there has been recorded a fall in voice tariffs which has subsequently caused for lower revenue in telecom market (Chen and Cheng, 2010). At a time when there is a steep fall in voice tariff rates in the industry, Mobile Value-Added Services (MVAS) are considered to be a major source of revenue, a growth driver, and a tool for differentiation (Kuo and Chen, 2006). Hence, it is important for telecom operators to analyse customer's preferences and satisfaction towards mobile value added services (MVAS), as they have a major impact on the customers' usage pattern, and provides a platform to service operators to become competent using innovations in their services. Indian mobile value added services market revenue is expected to reach $23.8 Billion by 2020 and expected to grow at a CAGR of 18.3% during the forecast period 2015-2020 (https://www.infoholicresearch.com/request-a-sample-report/?repid=1677).

In India, increasing mobile based business strategies are going to drive the MVAS market in the coming years. The rising investment activities from the MVAS value chain players and increasing adoption rate of connected devices are going boost the MVAS market growth. .Increasing mobile penetration, need for differentiation, high consumer demand and awareness, advanced communication and information technology, critically contribute towards growth of MVAS in the country. The operators are expected to provide high quality services by studying and analysing customer's preferences and their satisfaction with an aim to stay profitable in highly competitive telecom industry (Chen and Aritejo, 2008).

The research article aims to study the customer satisfaction for MVAS. On the basis of the relevant literature, M-Commerce, M-Entertainment, and M-Education have been identified as the key determinants of value added services in mobile telecommunication affecting customer satisfaction. These three determinants have also been used as constructs for the study (Nokia Telecommunication Market Study Report, 1999; and PwC Report, 2011)

2. LITERATURE REVIEW

Mobile Value Added Services (MVAS) includes some additional services provided to the customers by their telecom operators other than voice communication which ensures customers' entertainment and keep them updated through their mobile phones. These value added services includes voice mail, any digital or non-digital method which is to be paid by the customers. MVAS ensures a win- win situations for both service providers and customers, as service providers increases

their revenue through non voice process, whereas customers gain functional utility and are benefitted by digital empowerment. The study is divided into two parts: 1) categorization of MVAS; and 2) impact of VAS on customers' satisfaction. MVAS are cetegorised based on information, enablement, and application (ASSOCHAM, 2011); communication, entertainment, and mobile commerce or m-commerce (PwC Report, 2011); and on the basis of transactional and infotainment services (Nokia Telecommunication Market Study Report, 199).Some categories of MVAS were identified with their respective activities:

Mobile- Commerce (M-Commerce)-

M-Commerce comprises of the services that enables transaction using mobile phones. These services includes mobile banking, mobile payment, mobile ticking, mobile advertising, and mobile purchasing, which can be assessed by customers using mobile phones (ASSOCHAM, 2011; and Li et al., 2012). Mobile banking includes checking bank accounts, paying bills, fund transfer etc. (Jabri and Sohail, 2012). Whereas, mobile purchasing assists in placing orders and paying for products and services through mobile device (Hung et al., 2012).

Mobile- Education (M-Education)-

M-Education includes the services delivering educational content using electronic media and helping learners to acquire knowledge with no time and location constraints (Baloglu, 2007). M-education includes the services like: mobile reading, online books, educational updates, examination alerts, language training, and teacher training etc. (ASSOCHAM, 2011).

Mobile –Entertainment (M-Entertainment)

M-Entertainment services are one of the most exciting and evolving services among all the categories with extensive future prospective.M-entertainment enhances facilitates activities such as ringtones, movies, online videos, online games, music etc. (Penttinenet al., 2010; and Liang and Yeh, 2011).

Mobile Value Added Services (MVAS) and Customer Satisfaction:

Customer satisfaction is considered to be one of the critical factors for developing a long-term relationship and sustaining profitability in general, and especially in telecom sector. (McKinney et al., 2002). Value added services in mobile telecommunication are considered to be an important factor which influences the service provider selection, customer satisfaction, and loyalty (Ku et al., 2009; Santouridis and Trivellas, 2010; and Paulrajan and Rajkumar, 2011).

M-Commerce and Customer Satisfaction:

According to Hung (2007), there is a significant relationship between the perceived services and perceived service quality in MVAS. The study reveals a strong association between customer satisfaction in MVAS and m-commerce service quality and four factors— responsiveness, information quality, reliability, and assurance which affectm-commerce service quality. M-commerce id considered as a driving force which facilitates e-commerce as a result to the rapid increase in mobile phones, computers, and digital devices. (Hsu and Kulviwat, 2006). The study shows that use of mobile commerce (m-commerce) enhances customer satisfaction as a result to the applications based on individual needs. The following hypothesis is framed on the basis of these findings:

H1: M-Commerce has a positive significant impact on customer satisfaction in mobile value added services (MVAS)

M-Education and Customer Satisfaction:

M-education ensures delivering education and providing training programs using mobile learning through mobile phones (Ansari and Sanayei, 2012). There are so many ways of delivering effective education to the students using mobile phones. Bull and Reid (2004) recognized m-education as a way for forming an adaptive learning environment which provides personalised tailored material for learning and to develop learning satisfaction. The following hypothesis is framed on the basis of these findings:

H2: M-Education has a positive significant impact on customer satisfaction in mobile value added services (MVAS).

M-Entertainment and Customer Satisfaction:

Mobile phones are increasingly being used forentertainment and mass communication. Mobile- entertainment or M-entertainment includes time pass, which includes activities like music, playing videos, movies etc., which results into

customer's satisfaction (Wei,2008). M-Entertainment increases customer satisfactionowing to its salient external beliefs such as images and enjoyment which can be considered as benefits of m-entertainment (Shih, 2011). The following hypothesis is framed on the basis of these findings:

H3: M-Entertainment has a significant positive impact on customer satisfaction in mobile value added services (MVAS).

3. OBJECTIVES OF THE STUDY

The study includes the following objectives:

- To study the relationship between Mobile Value Added Services (MVAS) and customer satisfaction.
- To study the degree of association between Mobile Value Added Services (MVAS) and customer satisfaction.

4. THEORETICAL FRAMEWORK OF THE STUDY

A theoretical model was developed based on the literature with the aim of measuring customer satisfaction with mobile value added services (MVAS). The model contains three constructs affecting customer satisfaction such as m-commerce, m-entertainment, and m-education. The activities under each construct were identified by recent literature. The activities related to m-commerce are mobile banking, mobile purchasing, mobile payment, and mobile ticketing (Lin and Wang,2006; Choi *et al.*, 2008; ASSOCHAM, 2011; Nikou *et al.*, 2011; Safeena*et al.*, 2011; and Xu and Yang, 2012); m-entertainment contains activities such as music, games, internet browsing, ringtones, wallpapers (Lim *et al.*, 2006). M-education includes news updates, educational information, exam alerts, mobile dictionary, and mobile reading (Grönlund*et al.*, 2008); and Individual activity involved in a particular construct is considered as a separate variable.

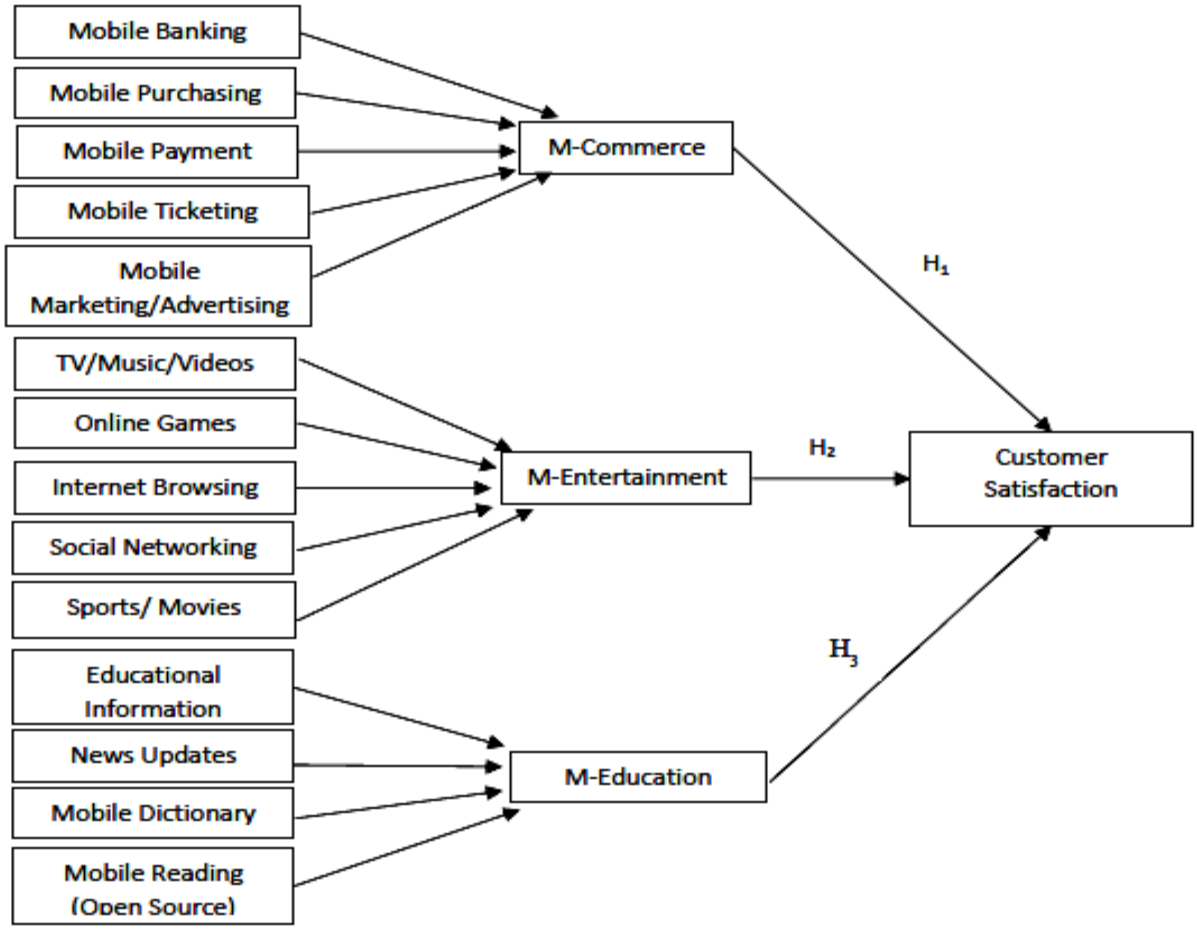

Figure 1: Theoretical Model of the Study

5. RESEARCH METHODOLOGY

Measurement and Scale: A self-administrated questionnaire was developed to study consumer satisfaction about MVAS. The questionnaire consisted of three determinants of MVAS,viz., m-commerce, m-entertainment, and m-education which will affect customer's satisfaction with MVAS. Customer satisfaction was measured on 5 -point Likert scale for different activities under each determinant of customer satisfaction. The average customer satisfaction score for VAS of a particular determinant was considered as satisfaction score towards a particular construct (Hair *et al.*, 2011). The pr*e*-test included 30 respondents to ensure the comprehensibility of questions by the actual respondents. In order to test the reliability of the questionnaire, cronbach alpha was used with value of 0.651, which means that questions have internal consistency.

Sample Design: The sample includes mobile service users of Jaipur city under the target population of the study. The customers of various service providers such as Airtel, Reliance Jio, Vodafone, BSNL, etc. were considered for sample frame for the study. The convenient sampling method was used to collect the data from 150 respondents from the population under the study. The criterion for sample size selection was based on a widely accepted rule of thumb is 10 cases/observations per indicator variable to set a lower bound of an adequate sample size (Nunnally, 1967).

6. DATA ANALYSIS AND INTERPRETATION

The data analysis was done using multiple regression analysis. Multiple regression analysis is used to predict a continuous dependent variable from a number of independent variables. The customer's overall satisfaction was considered as a dependent variable, whereas m-commerce, m-entertainment, and m-education were considered as independent variables to access multiple regression. The theoretical model of the study consists of three predictors, viz., m-commerce, m-entertainment, and m-education which affect customer satisfaction towards MVAS. Model summary shown in table-1 is used to test the overall model fit and whether the predictors of the study successfully determine customer satisfaction. The output table 1 shows the *R*, R^2, adjusted R^2, and the standard error of the estimate, which is used to determine how well a regression model fits the data. According to the output table, multiple correlation coefficient (R = 0.751) was found strongly positive between three predictors and customer satisfaction, and 56.7% of the total variance in the customer satisfaction is due to all the three predictors. The small difference between *R2* (0.567) and Adjusted *R2* (0.556) indicates the generalization of model for the population.

Table-1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751	.567	.556	1.72

Further, overall regression model fit was examined by the Analysis of the Variance (ANOVA)(Table 2). As per the table output, *F*-ratio is 63.20, which is also significant (p<0.000) at 5%Significance level and indicates significant role of the model to predict customer satisfaction.

Table-2: ANOVAb

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1 Regression	769.51	4	192.37	63.20	.000a
Residual	591.21	196	3.01		
Total	1360.72	198			

Finally, Table 3 includes regression coefficients in order to predict customer satisfaction for MVAS. The output shows a positive relationship between predictors of MVAS and customer satisfaction. The value of regression coefficients for each predictor shows the degree to which customer satisfaction is affected. As per the output table, if m-commerce satisfaction increases by one unit, the overall satisfaction would increase by 0.491 units, likewise if satisfaction of m-entertainment and m- education increase by one unit, the overall satisfaction would increase by 0.201 and 0.169 units respectively. Further, table output also includes t- values of each predictor, which indicates that larger the t- value with smaller sig. (*p*-value), the higher will be the influence to predict customer satisfaction. Hence, the *t*- value has been used to test the research hypothesis of the study. The m-commerce **(t = 8.673, p < 0.05),**m-entertainment **(t = 3.954, p < 0.05),** and m-education **(t = 3.524, p <0.05)** and all predictors significantly contribute in predicting customer satisfaction towards MVAS. **Hence we do not reject the hypotheses (H_1, H_2, H_3) framed in our research model**

Table No-3: Model Summary Table

	Unstandardized Coefficients		Standardized Coefficients	t	Sig	95% Confidence Interval for β	
	β	Std. Error	β			Lower Bound	Upper Bound
(Constant)	-1.537	.597		-2.567	0.012	-2.781	0.375
M-Commerce	0.563	0.062	0.491	8.673	0.000	0.415	0.656
M-Entertainment	0.338	0.081	0.201	3.954	0.001	0.166	0.502
M- Education	0.209	0.054	0.169	3.524	0.000	0.091	0.321

CONCLUSION

Mobile value added services significantly contribute towards generating non voice revenue for mobile telecom industry. As a result to the intense competition, mobile service providers have been forced to reduce the minutes of use per connection per month which resulted into reducing their average revenue per month per customer. As a result, providing some value added services to the customers becomes necessary which creates a win- win situation for both service providers and customers. The study focusses on studying customer satisfaction with mobile value added services. Based on the literature, three constructs were identifies which affects customer satisfaction, viz., m-commerce, m-entertainment, and m-education. The study revealed the positive relationship between MVAS determinants and customer satisfaction. Further, results depicts that customer satisfaction highly associated by m- commerce, followed by m-entertainment and m-education. Additionally, all three predictors of MVAS play a major role in determining customer satisfaction. The results also showed that m-commerce is strongest predictor of customer satisfaction followed by m-entertainment and m-education. The study will contribute towards helping the mobile service providers to provide their customers with value added service better than their competitors, in order to gain over the completion and to increase their revenue in competitive market.

REFERENCES

[1]. A. Ansari and A. Sanayei, "Determine the Effects of Mobile Technology: Mobile Learning on Customer Satisfaction and Loyalty", *International Journal ofInformation Science and Management*, 2012, Special Issue, pp. 138-152.
[2]. A.Baloglu, "A Flexible Mobile Education System Approach", *The Turkish Online Journal of Educational Technology*, 2007,Vol. 6, No. 4, pp. 5-15.
[3]. A.M. Jabri and M.S. Sohail, "Mobile Banking Adoption: Application of Diffusion of Innovation Theory", *Journal of Electronic Commerce Research, 2012*, Vol. 13, No. 4, pp. 379-391.
[4]. E. Penttinen, M.Rossi and V.K. Tuunainen, "Mobile Games: Analyzing the Needs and Values of the Consumers", *Journal of Information Technology Theory andApplication, 2010*, Vol. 11, No. 1, pp. 5-22.
[5]. H.S. Hsu and S. Kulviwat, "Personalization and Customer Satisfaction in Mobile Commerce", *Encyclopedia of E-Commerce, E-Government, and Mobile Commerce, 2006*,pp. 914-918.
[6]. I. Santouridis and P. Trivellas, "Investigating the Impact of Service Quality and Customer Satisfaction on Customer Loyalty in Mobile Telephony in Greece", *The TQM Journal*, 2010, Vol. 22, No. 3, pp. 330-343.
[7]. J.V. Chen and B.A. Aritejo, "Service Quality and Customer Satisfaction Measurement of Mobile Value-Added Services: A Conceptual Review", *InternationalJournal of Mobile Communication*, 2008, Vol. 6, No. 2, pp. 165-176.
[8]. M.C. Hung, S.T. Yang and T.C. Hsieh, "An Examination of the Determinants of Mobile Shopping Continuance", *International Journal of Electronic BusinessManagement*, 2012, Vol. 10, No. 1, p. 29.
[9]. M.Li, Z.Y. Dong, and X Chen, "Factors Influencing Consumption Experience of Mobile Commerce: A Study from Experiential View", *Internet Research, 2012*, Vol. 22, No. 2, pp. 120 141.
[10]. R. Paulrajan and H. Rajkumar, "Service Quality and Customers Preference of Cellular Mobile Service Providers", *Journal of Technology Management & Innovation, 2011, Vol*. 6, No. 1, pp. 38-45.
[11]. R.Wei, "Motivations for Using the Mobile Phone for Mass Communications and Entertainment", *Telematics and Informatics*, 2008, Vol. 25, No. 1, pp. 36-46.
[12]. S. Bull and E. Reid, "Individualized Revision Material for Use on a Handheld Computer", *Learning and Skills Development Agency*, 2004, Vol. 44, No. 2, pp. 35-42.
[13]. T.P. Liang and Y.H. Yeh, "Effect of Use Contexts on the Continuous Use of Mobile Services: The Case of Mobile Games", *PersUbiquitComput*, 2011, Vol. 15, pp. 187-196.

[14]. V. McKinney, K. Yoon and F.M. Zahedi, "The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach", *Information SystemResearch*, 2002, Vol. 13, No. 3, pp. 296-315.
[15]. Y. W. Shih, "Facilitators and Benefits of Using Mobile Entertainment Services", *International Journal of Mobile Communication*, 2011, Vol. 9, No. 5, pp. 458-476.
[16]. Y.C. Hung,"A Model for Service Quality and Customer Satisfaction of Mobile Commerce", *Journal of Global Business Management*, 2007, Vol. 3, No. 1, p. 1.
[17]. Y.F. Ku, C.M. Wu and W.J. Deng, "The Relationship among Service Quality, Perceived Value, Customer Satisfaction, and Post Purchase Intention in Mobile Value Added Services", *Computers in Human Behavior*, 2009, Vol. 25, No. 4, pp. 887-896.