Usage Motivations and Attitudes towards Mobile Internet amongst Consumers: An Empirical study in Delhi/NCR

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Abstract

The paper aims to examine the role of consumer motivations and attitudes for using internet via mobiles. It examines whether the availability of accessing SNS (social networking sites) through mobiles impacts the decision making processes, amongst consumers in their choice of mobile handsets. A survey of 740 consumers through convenience sampling method had been carried out in the Delhi National Capital Region. The paper highlights the correlation between the chosen motivations and attitudes with the internet usage over mobiles.

Introduction

Coupled with crowning feat of internet explosion and facing the popularity are the social networking sites. The online availability of countless number of networking tools has made online networking an emerging trend amongst the consumers and the corporate for socializing, finding long lost old friends and for business purposes. It has created a competitive advantage and continues to serve as a prime strategic resource to explore new avenues for businesses. The tremendous reach of internet has furthered the aisle of growth in many sectors including the telecommunications' sector. Many telecommunication companies thus provide their customers internet accessibility as a unique selling proposition in their value added services including the charm of various social networking sites (SNS). As a result, the penetration and usage of mobile handsets has increased tremendously. Mobile Internet in India has existed since the prevalence of 2G services in India and is rapidly increasing, according to reports by Telecom Regulatory Authority of India. According to the reports released by the Internet and Mobile Association of India (IMAI) and Indian Market Research Bureau, the Internet penetration in the has not crossed 16% of the population , but in absolute numbers this percentage is nearly 10 times the population of Australia. The report informs that approximately 243 million internet users in the country has surpassed the US as the world's second largest internet base after China. The US currently has an estimated 207 million internet users, while China has 300 million. The 205 million internet users that the IMAI reports for India are not all active users (those who use the internet at least once a month).But, these users are on a threshold stimulus of becoming active users, the report said.

There is thus a need to study the perceptions amongst regular and occasional consumers differing in their attributes and respectively in their mobile internet usage, as many telecommunication companies are essentially basing their unique selling propositions around these features. The study will help these players to identify and understand their target audience judiciously.

Research Objectives

i. To examine the role of major consumer motivations and attitudes for using internet via mobiles

ii. To understand whether the accessibility of SNS through mobiles impacts the decision making processes

iii. To highlight the correlation between the chosen motivations and attitudes with the internet usage over mobiles

iv. To identify the motivations to which more importance is attached to the demographic and psychographic profile of the consumers, highlighting the role of social networking sites

Literature Review

If a firm needs to succeed in the long run, then it must respond to the customers' changing needs, tastes and preferences (Narver and Slater, 1990; Webster, 1992). The firm will be profitable if the customers have a higher degree of satisfaction by using its products than by using the products from its competitors in the long run(Chien etal.,2003).This will help in attracting new customers too, as the firm now enjoys a competitive position (Fornell, 1992. Satisfied consumers have a high usage level of mobile services and possess a strong intention to recommend to their friends and relatives (Zeithaml et al., 1996).The accessibility of social networking sites as value added features in mobile phone handsets is new to India. Not much literature could be traced to the usage patterns and motivation levels amongst the Indian consumers, in this respect. Studies relevant to the international markets were found. It is however not possible to relate the studies in foreign markets to the Indian markets since the consumer behavior is different, e.g. there are variations in regular usage and consumption of specific features, product categories and other technological services. Accordingly,

Hypothesis 1A: The correlation between mobile handset brands and accessibility to social networking sites as a motivation to purchase is positive and significant.

Hypothesis 1B: Occasional users attach higher importance to technological curiosity as a motivation to purchase compared to regular users.

Hypothesis 1C: The correlation between accessibility to social networking sites over mobiles by regular and occasional users and ease of its operation as a motivation is positive and significant.

Attitudes Relevant To Purchase of Mobiles

The previous studies indicate that a favorable attitude in a behavior would result in an individual's strong intention to perform the behavior under consideration. Studies indicate that when behaviors pose no serious problems of control, they can be predicted from intentions with considerable accuracy. Many researches show the relation between intentions and actions for different types of behaviors, highlighting that knowledge and education appear to be central to the effective marketing. Chryssochodis (2000) indicates that consumers who have a lack of knowledge about a product or its service will not buy it or use it, unless they are educated about its real benefits.

Hypothesis 2A: The correlation between social networking sites (SNS) accessibility and the importance attached by regular and occasional internet users to conviction about the utility of mobile internet is significant and positive.

Krystallis and Chryssohoidis (2005) indicate that two factors-quality and security, and trust play an important role in defining willingness to pay for the most desirable features.

Hypothesis 2B: The correlation between accessibility to social networking sites and the importance attached by regular and occasional mobile internet users to the brand reputation and associated brand image is positive and significant.

Motivations and Demographic Variables

Age differences reflect purchase motives. Young consumers appear to have a strong positive attitude towards technology adoption and base their choice of mobile

handsets accordingly while old consumers are more influenced by considerations for the ease of operations available on their handsets.

Hypothesis 3: Importance of SNS as a purchase motive decreases with age whereas importance of ease of operations in the handset as a purchase motive increases with age for all buyers.

Research Methodology

The population under investigation in this study has been mobile internet users in the 16+ age group in Delhi national capital region (NCR). In the present study, the classification of consumers has been done on the basis of usage and frequency of accessing internet through mobiles by users. People accessing internet through mobiles for more than thrice in a week have been considered as regular users whereas people accessing internet through mobiles for less than thrice in a week have been considered as occasional users. This study identifies the differences attached to the importance of different motivations between techno-savvy and non-techno-savvy users. Accordingly, Goldsmith and Hofacker (1991) 6-item domain specific innovativeness (DSI) scale, which is a short, valid, reliable self-report scale, has been used for measuring consumer innovations at the category level (with reverse coding for negatively worded items). It is a balanced scale. Several published studies in US have used the scale and speak of its usefulness for consumer researches (Flynn and Goldsmith, 1991a; 1993b; Goldsmith and Flynn, 1995). DSI, the importance attached to all the motivations and attitudes have been measured in the study on Likert scale 1-5 scale (1=strongly disagree and 5=strongly agree) for standardization purpose.

Questionnaire pre-testing and the resulting improvements took place during January-February 2013 period. This was done to test the content validity of the questionnaire (Churchill, 1979). Subsequently, the personal interview and survey through systematic sampling method have been carried out in Delhi NCR between Februarys-June 2011 period in the front areas of dedicated famous up market mobile stores. A survey of 750 consumers through convenience sampling method had been carried out in the Delhi National Capital Region between February 2011 to Jun.'2011 period. out of which 10 questionnaires were incompletely filled. A sample data for all the 740 respondents has been used for analysis except in the sections where usage behavior of only

regular and occasional buyers has been compared. The level of significance for all analysis has been set at the level of significance of <0.05. The demographic section of the questionnaire asked respondents to record their gender, age, income, education and time of adoption. The objective has been to collect more or less equal number of regular and occasional mobile internet consumers so that the relevant sample size can be analyzed by the statistical procedures using SPSS package. The survey has 306 regular users and 434 occasional users. There are 503 males (coded as 1) and 237 females (coded as 2) in the study. People in the 16+ age group have been analyzed. For analysis purposes, the age of the respondents has been classified into four groups with 1=16-18 years (69 respondents); 2=19-25 years (60 respondents), 3 = 26-35 years (156 respondents), 4=over 36 years. Education has been measured in terms of 1=being up to Graduate (457 respondents) and 2=being post-graduate (214 respondents). Time has been one of the main elements of the diffusion process and analyzing time of adoption is very critical in this process of understanding the diffusion process. Accordingly, researches use time of adoption to assign consumers to the adopter categories, wherein a three-tier classification of adopter categories of less than six months, for about a year and for more than two years, has been noted. Along the similar lines, in this study, the adopter categories have been classified into three classes ranging from 1=less than 6 months (134 respondents); 2=6-12 months (236 respondents) and 3= More than 1 year (370 respondents).Number of features used regularly is correlated with motivations of using mobile internet, value added services, ease of operations in the handset, techno-savvy behavior, brand association, status symbol and with conviction about utility (table 1). Number of features used occasionally is correlated with technology motivation and conviction about utility attitude (Table 1). The strongest motivations are techno-savvy and brand associations for both types of buyers (Table 2).

Table 1: Correlation of number of features used, associated motivations & attitudes

Parameter	Number of features used Regularly	Number of features used Occasionally
SNS accessibility	0.345 (57)*	0.316(55)*
Technological Curiosity	-0.161(57)	0.316(55)*
Security	0.5 (57)	-0.044(55)
Ease of operations	0.346(57)*	0.146(55)
Financial reasons	0.043(57)	0.043(55)
Conviction about Utility	0.329(54)*	0.172(55)
Connectivity problems	0.178(54)	0.187(53)
Brand Reputation	0.206(54)	0.275(53)*
Techno – Savvy	0.049(54)	0.045(53)

Table 2: Measurement of constructs for regular and occasional users

Construct	Regular user	Occasional User	t/t' value
SNS accessibility	4.474(57)	4.345(55)	0.828
Technological Curiosity	3.035(57)	3.364(55)*	1.785
Security	4.053(57)	3.891(55)	0.907
Ease of operations	3.386(57)*	3(55)	2.169
Financial reasons	3.368(57)	3.364(55)	0.019
Conviction about Utility	3.648(54)	3.396(53)	1.167
Connectivity problem	4.204(54)	4.283(53)	0.650
Brand Reputation	3.907(54)	3.906(53)	0.006
Techno – Savvy	3.852(54)	3.66(53)	1.133

The number of features looked into by both regular and occasional buyers are correlated in a statistically significant and positive manner with SNS motivation (Table 1). Hence, hypothesis IA is supported. Curiosity as a motivation has higher importance for hypothesis IA is supported. Curiosity as a motivation has higher importance for occasional users vs. regular users (Table 2).The hypothesis 1B, thus, is supported. Finally, accessibility of SNS over mobiles is correlated with ease motivation but the correlation is not significant between the accessibility of SNS bought occasionally and ease. Hence, hypothesis 1C is supported partially. Also, regular buyers attach more importance to ease as a motivation when compared to occasional buyers (table 2).

The correlation of importance attached to conviction of the consumer about the utility of internet with number of features looked into by the consumers is significant and positive for occasional users but it is not statistically significant for regular users (Table 1). Hence, hypothesis 2A is supported partially. On the attitude front, the importance attached to the conviction of the consumer about the utility of mobile internet is quite strong and very similar for both regular and occasional users. The average rating is 4.204 for regular users and 4.283 for occasional users (Table 2) and the difference is not statistically significant by two tailed tests.

Consideration for technology is one of the two major motivations for mobile handset purchase. However, it can be understood that those customers who claim to be concerned about the technology and those who take positive action by purchasing for technological curiosity are not necessarily the same. One major reason underlying the limited effectiveness of the technology usage in inducing techno-friendly behavior is the failure to imbibe necessary attitudinal changes among the people. The study regarding technical awareness and knowledge in India

appear somewhat in contrast to those found in the context of consumers in developed countries. The study indicates that in India the technological penetration is still in a nascent stage and consumers in developed countries are in general more aware than in India. Accordingly, the fact that no statistical correlation is found between SNS accessibility number of categories purchased and the importance attached mobile internet users to the brand reputation and associated brand image can be explained.

Similarly, the fact that no statistical correlation is found between SNS accessibility and the importance attached to the brand association, while making the purchase decision about a handset can be explained by the fact that these services have just emerged. The major challenge is largely to indicate and guarantee to consumers that a product has been produced in consistency with the international standards to ensure security and reliability. The key factors in determining the size of the target audience are the affordability and the availability of such features.

High Innovativeness (Dsi) and Low Innovativeness (Dsi)

The innovativeness scale can be used to classify target consumers as innovators and non-innovators (Gold and Flynn, 1992). The reliability for DSI scale in this study is at 0.686(Cronbach alpha) and the average inter item correlation is at 0.275. Goldsmith and Flynn (1992) have, out of maximum possible average rating of 5 in the scale, used 3.5 and above, Goldsmith et al (1999) have used 4 and above while many researchers have used 3.667 and above as the cut off point for identification of innovators. In the study, people with scores of 3.833 and above on the scale have been identified as 'Innovators' while the rest are non innovators. The means of the measurements and t-test values for the two groups are presented below (Table 3).

Table 3: Innovators with DSI >= to 3.833 and Non-innovators with DSI< 3.833

Construct	Innovator (DSI>= 3.833) Mean	Non Innovator (DSI <3.833) Mean	t/t' value
SNS accessibility	4.75(20)*	4.288(80)	2.216
Technological Curiosity	3.1(20)	3.225(80)	0.501
Security	4.4(20)*	3.787(80)	2.646
Ease of operations	3.55(20)*	3.1(80)	1.856
Financial reasons	3.65(20)	3.313(80)	1.298
Conviction about Utility	4.053(19)*	3.468(77)	2.037
Connectivity problem	4.421(19)	4.208(77)	1.286
Brand Reputation	4.105(19)	3.896(77)	0.848
Techno – Savvy	3.789(19)	3.831(77)	0.196

People with higher DSI attach more importance to motivations like SNS accessibility, technological curiosity, security, ease of operations and brand reputation (table 3). A comparison between tables 2 and 3 clearly indicates that the attitudes towards the conviction about utility, reputation and techno savvy are more or less at the same level between regular users and occasional users and also between innovators and non innovators signifying that these requirements are more universal in nature.

Correlations between Motivations

For all buyers, statistically significant correlation exists between ease of operations-SNS accessibility, technological curiosity-conviction about utility, ease of operations-handset problems, handset problems- financial problems and convictions about utility, financial reasons- conviction about utility (Table 4).

Table 4: Correlation between motivations (all buyers)

Parameter	SNS Accessibility	Techno. Curiosity	Ease of operations	Handset problems	Financial reasons	Conviction about utility
SNS accessibility	1					
Technological Curiosity	-0.026(117)	1				
Ease of operations	0.387(117)*	-0.052(117)	1			
Handset problems	0.003(117)	0.038(117)	0.231(117)*	1		
Financial reasons	-0.091(117)	-0.12(117)	-0.053(117_	0.344(117)*	1	
Conviction about Utility	-0.005(111)	-0.219(111)*	0.167(111)	0.203(111)*	0.397(111)*	1

For regular buyers, the same operations-SNS accessibility, technological curiosity-conviction about utility, ease of operations-handset problems, handset problems-financial problems is statistically significant. In factor analysis (oblique rotation) for regular users, two factors emerge with the first factor having ease of operations, financial reasons (negative loading) and handset problems loading on first factor and utility and financial reasons on the second factor. The two factors together explain 59.2% of the variance in the data with the first factor explaining 30.7% and the second one explaining 28.5% of the variance. The two variables are correlated at 0.047. Given the relatively lower level correlation between the factors, a varimax

rotation also highlights a very similar factor structure and similar type of variance in the data.

For occasional buyers, the correlation pattern is quite different. Three correlations which are statistically significant for regular buyers (technological curiosity-utility, ease of operations-SNS accessibility and handset problems-financial reasons) are not significant here. Only handset problems-financial reasons relationship is statistically significant for both types of buyers. The other relevant correlations that are significant for occasional buyers are curiosity-ease, financial –handset problems, security-handset problems, and conviction about utility-ease. The three factors together explain 75.4% of the total variance. Among the three attitudes for all buyers, only the relationship of conviction about utility-techno-savvy is statistically significant (r=0.23). For regular buyers, none of the attitude correlations are significant and among occasional buyers only the correlation between conviction about utility and reputation is significant (r=-2.275).

Influence of Demographics and Time on Motivations and Attitudes

The male respondents are 503 and the female respondents are 237. The consumers falling in the age groups 16-18 and >35 show a similar pattern. In case of male respondents, the frequency of usage is highest at the less than three times in a week whereas it is the lowest at the greater than 10 times. For female respondents, frequency of usage is highest at less than three times in a week whereas it is the lowest at 8 to 10 times in a week and is at a high point at >10 times. The major activities undertaken include connecting with friends and checking mails(Table 4). The 16-18 age group uses mobile internet more often for the purpose of connecting with friends through social networking sites, whereas the other age groups use it more often for the purpose of checking emails(Table 5). Most of the people do not use mobile internet due to connectivity problems. People are restricted from using mobile internet due to financial reasons and handset problems, depending on the handset which they own (Table 6).

Table 4 Frequency of using mobile internet

Frequency of using mobile internet in a week	Connecting With Friends	Internet Surfing	Checking Emails	Others
Less than or = 3 hours	107	75	123	31

4 to 7 hours	65	34	74	16
8 to 10 hours	39	13	40	5
Greater than 10 hours	81	37	92	41

Table 5 Activities undertaken through Mobile Internet

Age Group	Connecting With Friends	Internet Surfing	Checking Emails	Others
16-18	24	19	18	4
19-25	202	106	220	59
26-35	49	27	72	21
>35	13	6	19	9

Table 6 Reasons for Not Using the Services More Often

Financial Reasons	Connectivity Problem	Lack Of Time	Handset Problem	Not Interested	No Problem	Others
132	206	110	160	106	57	43

Table 7 Reasons According To Age

Age	Financial Reasons	Connectivity Problem	Handset Problem	Lack Of Time	Not Interested	No problem	Other Problems
16-18	11	12	17	8	13	1	14
18-25	98	155	91	65	55	34	21
26-35	16	34	36	27	23	17	5
>35	7	3	15	9	13	4	3

The table7 shows the reasons for not using the services more often categorized with different age groups. 16-18 age group doesn't seem to be specific about their reasons of not using mobile internet. They seem to be affected by almost every reason. People in the 19-25 age group are mostly restricted in their online activities due to the connectivity problems. Connectivity problems basically include problems like- slow speed,security reasons,network transfers.

Table 8 Age * Gender * Usage Cross Tabulation

Gender			Connecting With Friends(SNS)	Internet Surfing	Checking Emails	Others
Men	Age	<18	45.8%	29.2%	20.8%	4.2%
Men	Age	18-25	33.6%	19.7%	37.7%	9.0%
Men	Age	25-35	27.6%	14.3%	46.7%	11.4%
Men	Age	>35	27.3%	9.1%	40.9%	22.7%
Women	Age	<18	31.7%	29.3%	31.7%	7.3%
Women	Age	18-25	35.9%	13.5%	37.8%	12.8%
Women	Age	25-35	31.3%	18.8%	35.9%	14.1%
Women	Age	>35	28.0%	16.0%	40.0%	16.0%

Table 9 Chi-Square Tests (Gender and Frequency)

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.383[a]	3	.497
Likelihood Ratio	2.300	3	.512
Linear-by-Linear Association	.275	1	.600
N of Valid Cases	740		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.55.

$H4_0$ = The two variables gender and frequency of accessing the internet through their mobile handsets are independent of each other.

$H4_1$ = The two variables gender and frequency of accessing the internet through their mobile handsets are dependent on each other.

Since the calculated value 0.497 is greater than the tabulated value 0.05, we accept the H0 hypothesis and conclude that there is no relationship between both the variables.

The future of Indian mobile Internet usage is all the more promising with the introduction of the 3G spectrum and increasing usage of mobile applications. The 3G spectrum offers end users with better options for Internet access and gullible opportunities for video calling, video on demand, multi-tasking among numerous other applications. Mobile applications have already become the key reason behind the growth of mobile internet. The consumers are pleasantly happy with the various value add-ons are increasingly relying on these applications for their leisure as well as for their daily essential chores. Mobile applications must be customized for the urban and rural consumers. More of this pattern will be observed due to rising affluence levels and demand on both the fronts. Apart from 3G services and mobile applications, the introduction of exciting gadgets like smart phones have also played a key role in increased mobile Internet usage. Data plans suited to the end users, which can be used in conjunction with such devices are increasingly being sold by various telecom operators. Introduction of tablets is yet another recent phenomenon which has enabled the users for enriching their experience in accessing services. Passive infrastructure sharing by telecom operators has reduced costs for each operator, and is another reason for lower subscription rentals. Network cost optimization, outsourcing of non-core activities have been other areas that have also helped telecom operators save costs and levy lower charges to consumers. In addition, the availability of cost-effective mobile phones has been a reason for rising mobile subscriber base in India. As per latest industry reports, there are more than 50 mobile handset manufacturers in India today, and are ever increasing in the Rs. 25,591 crore Indian handset market. As a result, there is tremendous competition among these entities. Besides an increasing mobile subscriber base and cheaper cell phones, the rise in computer literacy and Internet awareness has played an important role in increased Internet usage.

The limitation of this study is that the sample is restricted to a single geographic area in India in Delhi National Capital Region (NCR). Further, the buyers have been

surveyed while they were visiting some of the established outlets and they could have inherently more positive attitudes towards the product. Thus, more studies will be necessary to discriminate more effectively between different buyer groups in different geographical locations. It is a possibility that the results may be different for two-three tier cities.

Conclusion

The study indicates that in India the technological penetration is still in a nascent stage and consumers in developed countries are in general more aware than in India. Accordingly, the fact that no statistical correlation is found between SNS accessibility, number of features used and the importance attached mobile internet users to the brand reputation and associated brand image can be explained. Similarly, the fact that no statistical correlation is found between SNS accessibility and the importance attached to the brand association can be explained by the fact that these services have just emerged. The major challenge is largely to indicate and guarantee to consumers that a product has been produced in consistency with the international standards to ensure security and reliability. Also, the affordable availability of such features is a key factor in determining the size of the target audience to a large extent. Also, with a consistent demand for cell phones observed across villages, towns, cities and states, mobile handset companies are competing with one another to provide feature-rich phones at reasonable prices. The common man has been a clear winner with a wide range of mobile phones to choose from.

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