Consumer Attitude Regarding Mobile Service Buying Behavior in India with Special Reference to National Capital Region (NCR)

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Abstract:

Cellular phone services in India have grown by leaps and bounds since the turn of the century. Competition is stiff and companies adopt various practices to attract young customers and retain them. Significant attempt is seen in wooing the youth segment with various schemes and offers. The tendency among the service providers is to understand the mind of the youth segment. In the present ***exploratory study****, a sketchy picture has been presented about the service providers in India, which is followed up with* ***finding various factors affecting perception of the buyers regarding*** *the cell phone services according to the youth of NCR. By using* ***Gratification model*** *and followed by* ***factor analysis*** *of data collected, it was concluded that* ***personality factor, service performance, extra packages, internet facility, tariffs, coverage, value added service,*** *are the crucial factors.*

Introduction:

Objectives of the report:

1. To study the behavioral characteristics and several other factors before purchasing a mobile service connection.
2. To study the attitude of teenagers and youth towards cellular phone service.
3. To investigate the awareness with regards to recent mobile service facilities in market.

Problem Definition

This study was undertaken to find out the perception of the youth in NCR about different mobile service providers. NCR was chosen as the location because it has a huge student population, with students from all over India. Most students use pre-paid mobile phones. Over the last few years the use of cell phones in this region has grown tremendously, and new players have entered this circle. It has the higher density of mobile phones in India (almost 75%). The main objective of this study was to generate perceptual maps for the various pre-paid mobile service providers present in this region. The Target segment for the survey was graduate and post-graduate students of arts, Science, engineering, management and professional colleges.

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There are six pre-paid mobile service providers present in the city, and they have all been considered for this study purpose. The different service providers Considered in this study are: (a) Airtel (b) MTNL (c) Vodafone (d) Reliance (e) IDEA and (f) Tata Teleservices.

Literature Review:

MACRO (Market Analysis & Consumer Research Organization). In this report MACRO did a study in Mumbai areas and they took samples of youths and teenagers and what their perception about different cellular service providers in this area. The study primarily designed to explore the relationship between gender, age, behavioral trends and mobile service provider usage pattern of teenagers and young people in the age group 12 to 29.

Sayan Chakraborty(April, 2006.) This study investigated motivations of usage, common usage scenarios and the attitude towards mobile phones in public settings among university students in a mature market (United States) and a rapidly growing new market (India). The author believes that the study will contribute valuable learning's about the field of mobile communication to the broader academic knowledge base. This study may help information architects in designing interfaces to meet the unique needs of the particular market.

Abhay jain (The Icfai National College) and **B.S. Hundail** (Guru Nanak Dev University during July to December 2005) made a survey among 1357 respondents who use mobile phones and this explanatory study investigates the factors influencing the rural consumers' buying behavior in the mobile phone market. The data has been collected from the rural regions of Punjab, India. (**Sandra Sieber, Josep Valor Sabatier** (June 2003) made a study how young people are developing new and innovative ways of interacting using technology. Authors conducted an empirical study in which they first analyzed the existence of difference in technology adoption, acquisition, and usage of technology and mobile telephony of young people in general and those that are online. Next, they carried out the same analysis differentiating between those people that assess themselves as technology savvy and technology inexpert, finding that their patterns of mobile phone usage vary significantly along all analyzed dimensions **Riquelme** (2001) conducted an experiment with 94 customers to identify the amount of self knowledge that the customers have when choosing a mobile phone brand. The study was build on 6 key attributes telephone features, connection fee, access cost, mobile to mobile phone rates, call rates and free calls which are related to mobile phone purchasing respondents. The research shows that consumers with prior experience about a product can predict their choice but tend to overestimate the importance of features. Call rates and free calls underestimate the importance of a monthly access fees, mobile to mobile rates and connection fees.

Research Model Base

Reason of choosing Gratification Model

We used gratification model (*Uses and gratification theory*) which is taken from *Journal of Business & Economics Research – February 2008* Assessing "User Attitudes toward Mobile Commerce in the U.S. vs. Korea: Implications for M-Commerce CRM".

- The author in this paper expects that the model explains why mobile phone users' willingness to adopt services and their internal beliefs and attitudes affect their usage behavior (Davis 1989; DeSantics 1983; Ives, Olson, and Baroudi 1983).
- Factors proposed in this study include information, price, service, convenience, technology, promotional, and entertainment factor (Figure 1).
- This model measures the impact of such factors on user attitudes toward the mobile phone usage.
- The model also measures how user attitudes toward mobile phone usage affect user satisfaction.
- In this model, perceived usefulness and ease of use are considered predictors to investigate the external variables that affect users' acceptance of mobile phone usage behavior.

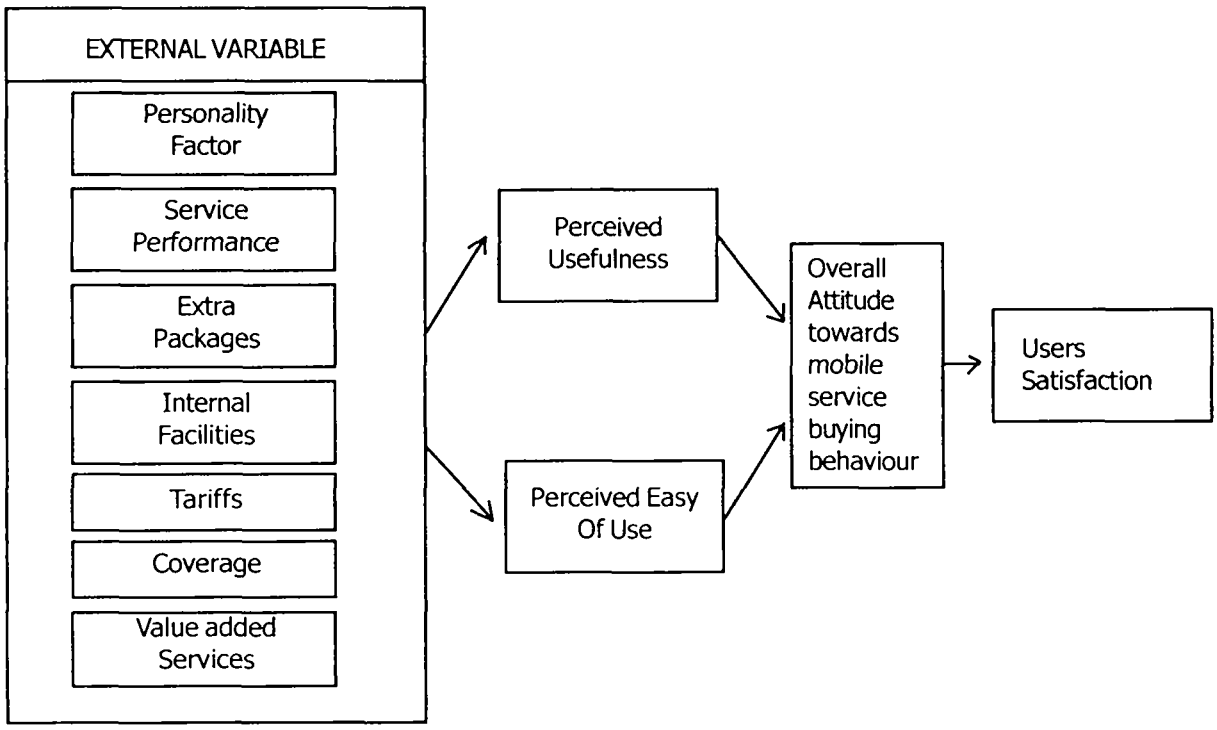
The Proposed Model of Users' Attitudes toward Mobile Phone Usage & M-Satisfaction:

Comparitive Analyses of U.S. vs. Korea

Uses and gratification theory(Herzog 1944; McGuire

1974; Luo 2002) has been applied in this study to explain users' attitudes and user satisfaction toward m-commerce usages. Well-known satisfaction theories which have explained consumer attitudes to brick-and-mortar businesses, such as contrast theory (Engel and Blackwell 1982; Cardozo 1965) and dissonance theory (Festinger 1957), this have been applied in this study of m-commerce/businesses. *Uses and gratification theory* has been developed from research in the context of traditional media, such as magazines, TV or radio (Herzog 1944; McGuire 1974). It has been applied to research in the context of the online and mobile environment (e.g., Luo 2002). Present study has been supported by another theory, the *Theory of Reasoned Action* (TRA), which suggests that individuals' performance of a given behavior is primarily determined by their intention to perform that behavior (Ajzen and Fishbein, 1980). This study adopted the *Technology Acceptance Model*, which has been widely used in the research of online user behavior, to describe users'/customers' attitudes and behavior in the mobile environment. Diffusion of innovation theory (Rogers 1995) also have applied to explain the cell phone usage behavior that users adopt new technology by considering factors, such as innovation, over time, communication over certain channels, and among the members of a social network.

Fig 1 Gratification Model



Research Methodology

The study was not started with any hypothesis in mind about factors for judging performance. All the data was obtained by the means of in-depth personal interviews and surveys. It was conducted in two phases, i.e. the **Exploratory** Phase and the **Conclusive Study** Phase and for the study or analysis we used SPSS and we have done factor analysis about different factors depending on purchasing the mobile service providers. And for demographic segmentation we use **chi square** test with cross tab analysis.

Exploratory Phase

The Exploratory Phase was used to ascertain the different factors that are used by students in forming opinions about a particular mobile service provider.

Students from different institutes were asked to participate in-depth personal interviews. The different parameters to be considered for formulating opinions about a service provider were tabulated. It was clearly stated that the research was being undertaken for pre-paid mobile services. So the factors like the kind of handset used and post-paid offers available were not to be taken into consideration. Under each of these broad parameters, the important component attributes were identified, which contribute to this factor as a whole. During the study, a number of important factors were obtained, but the most important and relevant factors were considered under each main parameter. The important factors were decided on the basis of in-depth interviews of total 99 respondents in this area.

Sample Design:

- Sampling Unit: Youths of NCR region
- Sample Size: 99 Respondents
- Sampling Technique: Stratified Random sampling.
- Sampling area: National capital region.
- Sampling tool: questionnaire.

Data collection:

Data Sources: students in the city and some schools, and colleges. By taking in-depth interview of total 99 respondents, by using questionnaire and discuss with several factors about purchasing behavior of cellular service.

Research Analysis:

Factor Analysis

In order to identify the factors affecting the choice of mobile service provider the exploratory study is used. To test the suitability of the data for factor analysis, the correlation matrices are computed and examined through SPSS. It reveals that these are enough correlation to carry forward with factor analysis.

Kaiser-meyer–Olkin measure of sampling adequacy (KMO test) for individual variables is studied from the diagonal of partial correlation matrix. The result shows sufficiently high for all the variables.

Table No. 1
KMO and bartlett's Test

Kaiser-Meyer-Olkin Sampling Adequacy	Measure of	.601
Bartlett's Test of Sphericity	Approx. Chi Square	449.229
	Df	190
	Sig.	.000

By using Kaiser-Meyer-Olkin test the sampling adequacy is computed, which is found to be 0.601 for the choice of mobile service provider. It is indicated that sample is fair enough for sampling.

The overall significance of correlation matrices is tested with Bartlett test of Sphericity for choice of mobile service provider (approx. chi-square= 449.229 significant at 0.0000). So this test also supports the validity of the factor analysis of the data set.

Hence, these entire tests indicate that the data is suitable for factor analysis. Principle components analysis is employed for extracting factor.

Rotation method: Orthogonal rotation with varimax was applied.

Criteria for significance of Factor loadings

For loading the factors, a decision must be made regarding the consideration of the factor loadings which are worthwhile. A factor loading represents the correlation between an original variable and its factors. One significant criterion given by J Hair, where loading of factors based on sample size is taken as basis for decision about significant factor loading. For our sample, 99 respondents, a factor loading of 0.50 has been considered significant. After a factor solution has been obtained, in which all variables have a significant loading on a factor. Variables with higher loadings are considered more important and have greater influence on the name and label selected to represent a factor. Hence, we examined all the variables for a specific factor and placed greater emphasis on those variables with higher loadings attempted to assign a name or label to a factor that accurately reflected the variables loading on that factor. All the factors have been given

appropriate names on the basis of variables represented in each case. The names of factors, the statement, the label and factor loading have been summarized in table 2 and 4.

Factor Attributes Comprising the Factor

Table no 2
Principal component analysis with varimax Rotated Component Matrix (a) for the choice of service providers in India

	Component						
QUESTIONS	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7
	-.203	.021	-.034	-.160	.789	-.144	.013
q11(call charges)	.098	-.043	.100	.235	.845	.165	-.027
q12 (sms charges)	.096	-.005	.133	.806	.129	.032	.130
q13(VAS & fun)	.100	-.034	.084	.832	-.051	-.026	-.214
q14(internet browsing)	-.098	.282	.487	.430	-.233	.155	-.035
q15(T.V. viewing)	.051	.079	.003	.302	-.003	.109	-.659
q16(info. Services)	-.074	.241	.767	-.017	.058	.116	-.193
q17(packages)	-.104	-.118	.713	.090	-.054	-.053	.303
q18(discounts)	.218	.083	.650	.185	.146	.185	.035
q19(international roaming)	.065	-.259	.055	.122	-.094	.740	.165
q20(voice quality)	-.085	.061	.200	-.077	.112	.765	-.158
q21(coverage)	-.347	.478	-.091	.075	-.241	.351	-.108
q22(network avail.)	.635	.088	-.039	-.079	-.083	.266	.330
q23(accessibility of service centre)	.342	.546	-.087	-.043	-.022	-.082	.241
q24(service quality)	.151	.669	.308	-.082	.037	-.032	-.031
q25(call centre service)	.001	.786	.089	.082	.009	-.116	.056
q26(staff behavior)	.041	.332	.191	.255	.006	.139	.607
q27(recharge facility)	.539	.284	-.158	.284	.005	-.027	.403
q28(use by friends)	.707	.140	.013	.239	-.074	-.127	-.036
q29(suits personality)	.738	-.072	.065	-.015	.015	-.050	-.334
q30(attracted by advertisement)	.226	-.397	.391	.030	-.079	.541	-.188

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 12 iterations

Table no 4

NAMING OF DIFFERENT FACTORS

FACTOR NO	NAME OF DIMENSION	LABEL	STATEMENTS	FACTOR LOADING
F1	PERSONALITY FACTOR	Q23	Proximity & Accessibility of service centers	.635
		Q28	Members / friends use this service	.539
		Q29	I feel it suits my personality	.707
		Q30	I was attracted by the advertisement	.738
F2	SERVICE PERFORMANCE	Q22	During rush hours and during holidays	.478
		Q24	Quality of service at service center	.546
		Q25	Call center performance	.669
		Q26	Staff behavior and customer support	.786
F3	EXTRA PACKAGES	Q15	Television viewing on cell phone	.487
		Q17	Packages and discounts(Night bulk S.M.S)	.767
		Q18	Attractive friends & family discount packages	.713
		Q19	International roaming	.650
F4	INTERNET FACILITY	Q13	Fun activities (bubble messages tones videos music etc.)	.806
		Q14	Internet browsing (e-mail, GPRS ,edege)	.832
F5	TARIFFS	Q11	Call charges	.789
		Q12	SMS charges	.845
F6	COVERAGE	Q20	Voice quality	.740
		Q21	Coverage at variety of locations (indoor, outdoor)	.765
F7	VALUE ADDED SERVICE	Q16	Information services (sports, news, stocks)	.659
		Q27	Facilities and convenience (scratch card easy load etc.)	.607

Factors affecting the choice of service provider:

The choice of service provider was affected primarily by facilitating factor. Network coverage, tariffs, internet facilities, coverage, value added services, packages, discounts easy availability of connection are considered to be the prime factors. Among which personality factor attracts young customers proximity and accessibility of service centers the proper advertisement also attract them, they also think how many friends and members are using this service. So service provider should concentrate on this factor very effectively. Then service performance is regarded the second factor which are like service during rush hour and holydays, call centre performance, staff behavior & customer support Center also effect their choices. The service provider has to concentrate on this facilitating factoring order to grab the market. Packages are regards as the third most important factor. Now a days service providers in India are giving lots of packages and discounts during night calling and bulk messages, SMS packages etc, offering gang calling facilities to friend or some specific numbers thus they also attract friends and family members for discounts the respondent has been seen enquiring from others regarding the satisfaction level from their service provider. Then forth factor is internet facilities like fun activities (bubble messages, tones, music etc) also attract young customers. And internet browsing (e-mail, GPRS, EDEGE) also attract customers. Then another most important factor is tariffs which consider being the fifth factor. Call tariffs is the most dominating factor consists of call charges and SMS charges. Now a days service provider more concentrate on this factor. After that coverage is considered the sixth factor but now a days coverage is almost good for every service provider. Beside this value – added services had great impact on the decision making regarding the choice of service provider.

Demographic Analysis:

Demographic factor always influence the buying behavior of customers. So for any study demographic analysis always plays vital role that's why we have taken the demographics into account in our project. The demographics characteristics of the respondents depicted that the users belong to 15-27 group which can be mainly depicted as the youth. The youth has been mainly divided into two categories of college going, unemployed youth & working youths. They also have been divided according to their marital status. It reveals that the mobile phone is beneficial for the college going students and also for the job holders. In this study it is also mentioned that how many respondents belong to any college or university or they are working or not. Then the respondents are also divided on the basis of sex as today women are playing significant roles for using mobile service. In any type of surveys especially in urban areas they are prominent respondents for our survey.

Data Analysis:

Here we are analyzing the relationship about house hold income and monthly expenditure on mobile card/ bills. We first analyze the relationship between Q2 and Q4.

To do so we take null hypothesis

(H0): there is no relationship between monthly house hold income and monthly expenditure on mobile card/ bills. After putting the data in SPSS we got result, where asymp. Sig. or p-value is .000<.05 .So null hypotheses is rejected

Thus we can conclude that there is significant relationship between monthly house hold income and monthly expenditure on mobile card/ bills.

Table No. 5

Case Processing Summary

Q2 = Monthly house hold income
Q4 = Monthly spending on the mobile's bill/cards

	Cases					
	Valid		Missing		Total	
	N	Per cent	N	Per cent	N	Per cent
q2* q4	99	100.0%	0	.0%	99	100.0%

Table no 6
q2 * q4 Cross tabulation

		q4(monthly spending)						Total
		1	2	3	4	5	6	1
q2 (household income)	1	1	0	3	1	0	0	5
	2	1	11	7	4	0	0	23
	3	0	7	3	5	3	1	19
	4	2	1	4	4	1	0	12
	5	1	1	5	3	5	1	16
	6	0	1	2	4	5	12	24
Total		5	21	24	21	14	14	99

Table no 7

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	70.404(a)	25	.000
Likelihood Ratio	72.070	25	.000
Linear-by-Linear Association	32.264	1	.000
N of Valid Cases	99		

a 32 cells (88.9%) have expected count less than 5. The minimum expected count is .25.

Q2: monthly house hold income
Option 1: income less then 10 thousand
Option 2: income 10K- 20k
Option 3: income 20k- 30k
Option 4: income 30k-50k
Option 5: income 50k-100k
Option 6: income greater than 100k
Q4: Monthly spending on the mobile's bill/cards
Opt 1: less than Rs 100
Opt 2: rs 100- rs 299
Opt 3: rs 300-rs 499
Opt 4: rs 500-rs 999
Opt 5: rs 1000-rs 2000
Opt 6: rs greater than rs 2000

The result shows that expenditure on mobile varies according to great extent like whose house hold income is in the range of 20k to 30 k they more preferred to spend rs100 to rs299 .Then for the people earn 30k- 50 k are preferring to spend rs100 to rs 999..

And for the people whose income greater than 100k prefer to spend rs2000 for bill purpose

Table No. 8
Case Processing Summary

Q1 = age group
Q4 = Monthly spending on the mobile's bill/cards

	Cases					
	Valid		Missing		Total	
	N	Per cent	N	Per cent	N	Per cent
q2* q4	99	100.0%	0	.0%	99	100.0%

Table no 9
Count **q1 * q4 Cross tabulation**

	q4 (Monthly spending on the mobile's bill/cards)						Total
	1	2	3	4	5	6	1
q1 (a 2	2	13	12	8	3	0	38
ge 3	3	8	10	8	5	2	36
grou 4	0	0	2	5	6	12	25
p)							
Total	5	21	24	21	14	14	99

Q1 : age group
Opt 2: 18 to 20 years
Opt3: 21 to 24 years
Opt4: 24 to 27 years
Q4 : Monthly spending on the mobile's bill/cards
Opt 1: less than Rs 100
Opt 2: rs 100- rs 299
Opt 3: rs 300-rs 499
Opt 4: rs 500-rs 999
Opt 5: rs 1000-rs 2000
Opt 6: rs greater than rs 2000
Now result shows that according to age groups of respondents spending varies up to great extent like whose age is in the range of 18years to 20 years they more preferred to spend rs100 to rs499 .Then for the people whose age in between 21 to 24 years prefer to spend rs100 to rs999. And for the people who's age in the range of 24 to 27 years, they are preferring to spend rs1000 to rs2000 for bill purpose

Chi-Square Tests

Here we are analyzing the relationship about the age group and monthly expenditure on mobile card/ bills
We first analyze: is there any relationship between Q1 and Q4.
To do so we take null hypothesis
(H0) : there is no relationship between age group and monthly expenditure on mobile card/ bills

After putting the data in SPSS we got result, where asymp. Sig. or p-value is .000<.05
So null hypothesis is rejected
Thus we can conclude that there is significant relationship between age group and monthly expenditure on mobile card/ bills

Table no 10

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.452(a)	10	.000
Likelihood Ratio	49.272	10	.000
Linear-by-Linear Association	31.421	1	.000
N of Valid Cases	99		

a 5 cells (27.8%) have expected count less than 5.
The minimum expected count is 1.26.

Table No. 11
Case Processing Summary

Q4 = Monthly spending on the mobile's bill/cards
Q5 = Gender

	Cases					
	Valid		Missing		Total	
	N	Per cent	N	Per cent	N	Per cent
q4* q5	99	100.0%	0	.0%	99	100.0%

Table no 12
q4 * q5 Crosstabulation Count

		q5		Total
		1	2	1
q4	1	3	2	5
	2	16	5	21
	3	18	6	24
	4	17	4	21
	5	9	5	14
	6	9	5	14
Total		72	27	99

Table no 13

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.23(a)	5	.803
Likelihood Ratio	2.295	5	.807
Linear-by-Linear Association	.318	1	.573
N of Valid Cases	99		

a 4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.36.

Take null hypothesis (H0) that: there is no significant relationship between Gender and the Monthly spending on the mobile's bill/cards.

Here asymp sig that is p-value 0.803 which is greater than 0.05

So null hypothesis is accepted

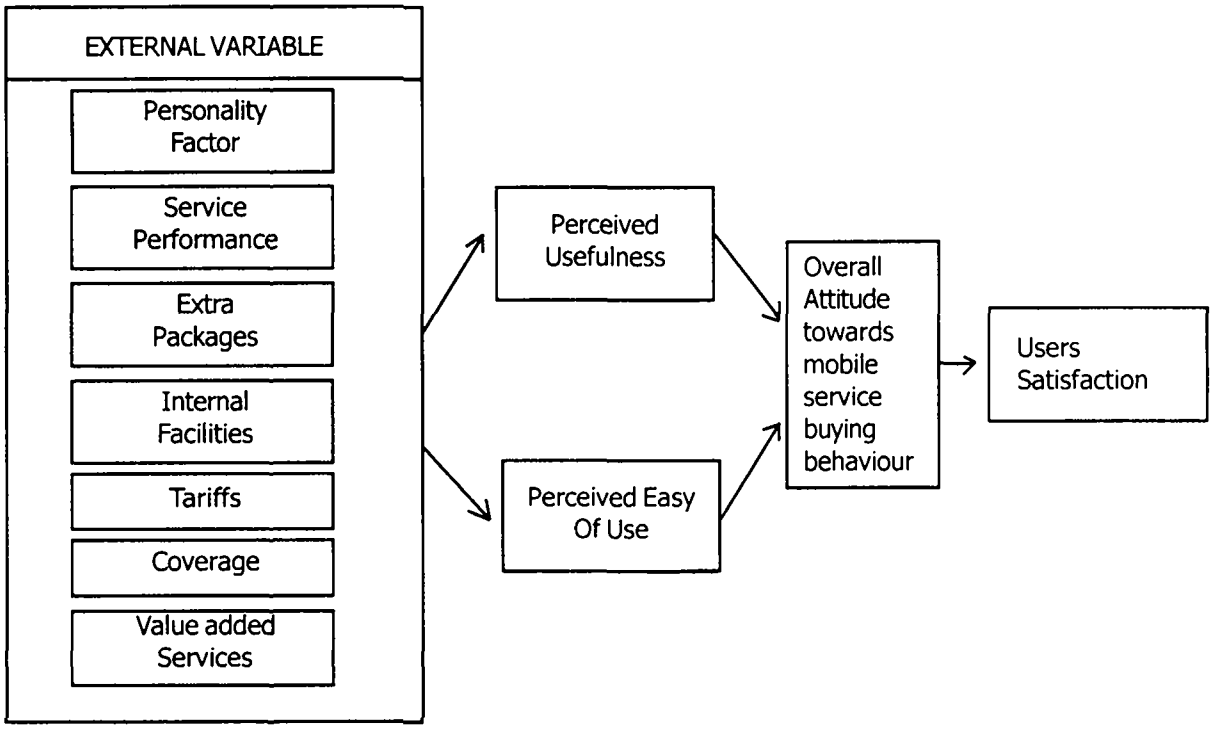
That means these are no significant relationship between Gender and the Monthly spending on the mobile's bill/cards.

Modified Gratification model (Fig. 2)

This study also measures how the impact of the perceived usefulness and ease of use on user attitudes differs in the NCR region.

The main attributes taken in consideration are 7 factors these are personality, service performance, extra packages, internet facility, tariffs, coverage and value added service. But the gratification model only uses the 7 factors which include information, price, service, convenience, technology, promotional, entertainment factors. This modified model measures the impact of such factors on user attitudes toward the mobile phone usage. So for our research purpose we add two more attributes to grab the whole factor which are covered by gratification model. **(Fig. 2)**

Fig 2 Modified Gratification Model



Limitations:

- The findings are entirely based upon the research conducted in NCR and hence may not be applicable to other metropolitan areas on counts of socio- cultural diversity and contextual factors.
- With a larger sample size spread across other metropolitan cities in India one might arrive at results with higher confidence levels and also at trends for urban India in particular.
- Such surveys need to be undertaken periodically to gauge the exact consumer perception that they keep changing with time.
- Due to constraint of time, certain topics have not been touched upon at all during the course of the study.

Conclusion:

- The main results of the study indicate that consumer education is an integral part of cellular service strategy.
- We used gratification model which use the 7 factor which include information, price, service, convenience, technology, promotional, entertainment factors. This modified model measures the impact of such factors on user attitudes toward the mobile phone usage. So in this research more attributes taken into consideration to grab the whole factor which are covered by gratification model.
- In the study ,most of the respondents had the college going students ,so that their might be the reason the influenced by media and advertisement the other source like newspaper, television ,radio, cinema and direct mail ,rural – specific promotion methods like demonstration ,house to house campaigns ,processions, would be more useful in attracting the attention of the existing and new consumer.
- While making the choice regarding the service provider, they focused on facilities provided, effectiveness, as far as customer selected in this study is concerned the service providers more capable which provide the services with high quality at low prices.
- Promotion – in promotion the main emphasis on consumer got the facilities of television viewing on cell phone, packages discounts (night discount, bulk SMS tariffs etc). So in this study most of the consumers agree about the packages provided by the companies.
- Service providers –In this study emphasis on services during rush hours and holidays, quality of services at the service centre, call centre performance etc the consumers strongly agree about those services provides by the company.
- Tariffs –consumers highly satisfied on call charges as well as SMS charges.
- Consumers gave more emphasis on voice quality and coverage at variety of locations.
- As far as value added services are concerned information services as well as facilities and convenience are concerned they agree over at that point.
- As far as personality factors are concerned consumers believe that it is also an important factor to be considered while selecting a particular brand.

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