IMPACT OF PERSONAL FACTORS ON USAGE PATTERN AND FEATURES NEEDED REGARDING MOBILE PHONES: A STUDY ON MAJOR CITIES OF MADHYA PRADESH

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Abstract

Indian mobile phone market is very competitive in nature. Every day mobile phones companies introduce new feature in their products. Technological innovation gives users more choices. This Multitasking ability of a mobile phone makes it a very essential commodity for every individual.
Today a mobile phone has given us facilities like on online shopping, online banking, digital camera, office tools, multimedia utility like music and videos and many more through various software and applications .
This study has been undertaken to address the impact of personal factors (age and gender) on usage pattern and features needed of mobile phones. The study was under taken in major cities of Madhya Pradesh approx five hundred respondents are interviewed through a structured questionnaire and responses of 400 are taken in to study. The Spearman's Rank Correlation Coefficient was applied to the test the hypothesis.

Key words: Personal Factors, Product Features, Product usage and Mobile Phones

I. INTRODUCTION

Mobile phones have become a vital part of our daily life. Everyone from youngsters to old men has a personal mobile phone of their own. In present century it is difficult to find out a person without a mobile phone. Mobile phones provide flexibility, mobility, connectivity, facility and efficiency to both consumers and marketer. Today mobile phones become daily necessity in most of the countries of the world. It goes beyond its fundamental role i.e. for Communication purpose. This gives opportunities to many companies to launch products in the market.

Indian telecom industry is creating immense opportunities for handset manufacturers. Among the fastest growing sectors in the country, telecom has been zipping up the growth curve at a fiery pace more than hundred companies are selling their products in India. The achievements of last few years in the telecom industry are these - the world's lowest call rates (1 paisa/sec, the world's cheapest mobile handset under Rs 1000, and the world's most affordable 4G smart phone under

Rs.4000. The decreasing cost of latest smart phones allowing companies to deeply penetrating the Indian markets.

The online shopping in country gives opportunities to customers to purchase world class products at very competitive rates. The trend of exclusive launch of newer products through websites only also blistered the whole scenario.

The increasing population of smart phone has given birth to mobile application (app) market in India. Today there are approximately seventeen companies are providing mobile phone services in India, this extreme competition has caused drop in call charges across the country. The low call charges and better network connectivity mode mobile phone a commodity of the common man.

The term consumer behavior is defined as the behavior that a consumer display in searching for purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs. Consumer buying decisions are influenced strongly by cultural, social, personal, and psychological characteristics, (Kotler & Armstrong 2008). The study of consumer behavior is concerned with what and why, when and how consumers buy the product and how often they buy it. This gives a clear idea that what meaning does product hold for customer. Consumer research takes places at every phase of consumption process, before the purchase, during the purchase and after the purchase. According to Philip Kotler "All psychological, social and physical behavior of potential customers as they become aware of evaluate, purchase, consume and tell other about products and services".

Consumer buying behavior influence by many factors in which Personal factors are a prominent factor which influence the buying of consumer in all most every product category. The personal factors like age, gender, occupation, income and education influence a great deal in customer purchase.
Consumer exhibits a high involvement decision making style when it comes to purchasing mobile phones. It is very vital to understand all different shades of their behaviors for companies. Companies who understands their customers' better captures high consumer choices.

II.   REVIEW OF LITERATURE

Report by Macro (2004) suggested that Mobile phones ownership found independent from the factors like working status and age. The study shows that end users need is the most prominent reason to purchase the mobile phone, followed by availability of extra phone at home then someone gifted it. That suggests that the impact of external factors on purchase is small. Need of communication, convenience of calling and better accessibility are main reasons of purchase of mobile phone
Liaogang et al (2007) suggested that when consumers purchase mobile phones, they give preference to product attributes like service, durability, and brand image over price, distinctiveness (including design and function), place, promotion, and advertisements. Brand feature uniqueness is the least important factor that affects consumers' mobile phone preference.
Park et al (2009) suggested that the socio-demographic characteristics of consumers influence the adoption of mobile phones. Consumers who have higher educational backgrounds are more likely

to adopt feature-rich mobile phones. The results show that consumers prefer mobile phones in slide/bar/swing forms with a touch-screen input system to a QWERTY input system. .. Consumers show highly positive preferences for full browsing on mobile phones but only when the phones are shaped in a slide/bar/swing form.

Singh et al. (2009) concluded that the mobile handset users of age group of 18-30 years are less price sensitive than consumers of other groups, they consider looks, brand, value added features and core technical features more important than users of any other age groups. On the other hand the consumers of age group 50 years and above have given greater importance to 'price' than consumers of other age groups. Customers of all age groups consider post - purchase services as one of the important factor.

Kimiloglu and Nasir (2010) conducted a research on discovering behavioral segments in the mobile phone market and analyze the decision making factors of mobile phone users the sample of the study was segmented into four basic clusters as pragmatic, abstemious, value-conscious, and charismatic and concludes that Pragmatic and abstemious customers focus on functional attributes of the product where as Value conscious focus on price and Charismatic segment considers technological superiority, durability, functionality and design.

Patel (2011) suggested that Family's income and gender were not the influential factors in mobile phone usage as most of the students spend a meager amount of just Rs. 100 per month. An extremely strong brand preference of Nokia existed in this market. The most used feature of the mobile phone was SMS and the most credible explanation for usage of SMS is that it's cheaper and students with limited financial resources can communicate effectively. Findings also showed that Male students send more text messaging than the female students. Idea and Vodafone have created a good image among the undergraduate management and computer students by providing good services.

Chaubey et al. (2011) researched on mobile phone users of uttrakhand state on various factors that influence buying behavior. The result indicates that there is high level of awareness in the consumers regarding the mobile services offered by different mobile service provides. The main purpose for which the consumers are using the mobile phones is being connected with social groups. The study indicates that the main factor which influences the purchase decision is the better connectivity.

Jegan A. and Sudalaiyandi (2012) conducted a research study in Kovilpatti, Thoothukudi district on mobile users and concluded that Call tariff is the most influencing factor which persuades the buyers to buy a particular mobile phone operator. Therefore, it is very vital to offer competitive call rates to capture more consumers. Companies should come forward with more consumer base services in order to increase customer base. Many respondents feel that signal problem is the one of the most faced problem by the consumers. Mobile phone operators should launch some schemes exclusively for senior citizens, housewives and students. Customer care services need to take regular feedback from the consumers in order to make the services more improved and customized. Mobile service provider should satisfy their current consumers by providing them innovative offers

Das (2012) suggested that most of the respondents like to have a handset of reputed brand, smart appearance, and with advanced value added features, pleasure ability and usability; in between 20-30 years in age-group, females in gender-group, graduates/post-graduates in level of education-group, students/service holders in occupational-group, urban residents in

geographical-area group and with annual family income between Rs.1-3 lakhs. Moreover advertisement plays most prominent role in buying decision of a mobile handset in the coastal districts of Odisha.

Balakrishnan (2012) indicated that respondents to consider brand, trend and price when purchasing mobile phones, similar to the youth worldwide. Most of the respondents were found that they use their mobile phones and SMS to socialize with their families and friends. As for the behavioral issues, the majority of the respondents were found to exhibit over-dependency towards mobile phone and SMS, with many constantly checking their phones for missed calls/messages, feeling distressed when they do not have their phones with them, replying messages immediately.

Kumar (2012) suggested that consumer relate to the all Motivational factors like Brand, Price, Style, Functions, and Quality means that they are equally conscious about all motivational factors while buying their mobile handset. The company can use same marketing strategies in the nearby cities of the same region because in the research it was found that there is no significant difference in all motivational factors like Brand, Price, Style, Functions, and Quality of the mobile handset and each has equally impact on all users.

Zameer et al (2012) In Pakistan result shows that urban customers use more branded phones like Apple, Nokia, and Samsung than customers of rural areas. In rural areas customers use chinese phone more as compared to branded phones. Customers of Urban area use internet and newspapers for sourcing information regarding mobile phones purchase. While rural customer use to watch TV ads for collecting information regarding purchase, other source for collecting are the mobile phone retailers. Price has low impact on buying behavior of urban consumers. On the other hand for rural consumers' functionality of mobile phone and Price of mobile phone are most important factors, that means the rural consumers are price conscious. It was also found that brand image and style of mobile phones had low on buying behavior regarding mobile phone.

Malasi (2012) conducted a research among undergraduate university students in Kenya. The result of the study shows that the change in product attributes influence the preference of undergraduate students regarding mobile phones. Most of the student's preference was significantly influenced by the attributes of the product or brand. The students considered the product attributes a major factor in purchasing a mobile phone. Product or brand factor such as design, style, data storage and quality need to be communicated well for making a competitive edge over competitors. The study also suggested that introduction of a needed and valued new feature is one of the most effective ways to compete in the tough market.

Sata (2013) researched at Hawassa town in Ethiopia According to the study majority of respondents owned Nokia mobiles phones and planning to replace it with apple, Samsung, Blackberry due to lack of new features and old technology of brand Nokia. The study shows that price is the dominant factor affecting the decision to buy mobile phone, and then the features of the mobile hand set is an important factor while purchasing the mobile phones. The other factors like brand name and durability of the phone also considered well in buying decision regarding mobile phone. The least considered factors are after sales service and social influences.

III. RESEARCH METHODOLOGY

Objectives of the study
1. To know the impact of Age on usage pattern regarding mobile phones.

2. To know the impact of Gender on usage pattern regarding mobile phones.
3. To know the impact of Age on features need regarding mobile phones.
4. To know the impact of Gender on features need regarding mobile phones.

The sample
The present study was undertaken at Bhopal, Gwalior, Indore and Ujjain cities in the State of Madhya Pradesh. The sample of 400 Respondents was collected i.e. 100 respondents from each city. Sampling Unit was final consumers of mobile phones. Purposive sampling technique was used in the study.

Hypothesis
$H_0 1$ There is no significant correlation in Age groups on usage pattern regarding mobile phones.
$H_0 2$ There is no significant correlation in Gender groups on usage pattern regarding mobile phones.
$H_0 3$ There is no significant correlation in Age groups on features need regarding mobile phones.
$H_0 4$ There is no significant correlation in Gender groups on features need regarding mobile phones.

The tool for data collection
The data for the study was collected through a well structured questionnaire. The questionnaire consisted of different mobile phone uses and features, that consumer possibly look for in product during purchase. Ranking scale was used in the questionnaire to collect opinion of the respondents.

Tools for Analysis
Present study is based on establishing a correlation between different sets of independent (Age and Gender) and dependent (Uses and features) variables. Since rank scale is used in the questionnaire, Spearman's Rank Correlation Coefficient"r" was used to analyze the data, which is worked out as under:

$$r=\text{Spearman's "r"} =1-\{6\sum d^2 /n\ (n^2-1)\}$$

Where n= numbers of paired observations
The values of Spearman's Rank Correlation Coefficient will always vary between +1,+1 indicating a perfect positive correlation and -1 indicating a perfect negative correlation between two variables. All other values of correlation coefficient will show different degree of correlation.
Computed value of "r" was compared with tabulated value of "r" for degree of freedom {n=10 (numbers of paired observations)}. If computed value of "r" was less than the tabulated value of "r", null hypotheses were accepted else rejected.

IV.   DATA ANALYSIS AND INTERPRETATION

Data have been analyzed in two steps:
   (1) Rankings have been calculated at first step- average of rankings has been taken of both the age groups.

(2) Data analysis has been processed through statistical procedure (Spearman's Correlation Coefficient) covering demographic (Age and Gender) variables.

Table No.1
Age wise Rank Correlation table for usage pattern

S. No.	Usage Pattern	Age<=25 Years	Age>25 Years
1	Social Networking	2	4
2	Email excess	8	5
3	Music	1	3
4	Games	7	9
5	SMS	4	2
6	Watching Videos	6	6
7	Clicking Photos	3	1
8	Taking Videos	9	7
9	MMS	10	10
10	Net Surfing	5	8

This table also shows that Age group less than 25 years and Age group more than 25 are having significant correlation in their perception with respect to usage pattern regarding mobile phones.

As per the table No.1 of Rank correlation regarding mobile usage pattern age wise shows that respondents of age group under 25 years ranked **music** at 1 whereas age group above 25 years ranked **music** at 3, in the same way respondents of age group under 25 years ranked **social networking at** 2 whereas age group above 25 years ranked **social networking** at 4, respondents of age group under 25 years ranked **net surfing at** 5 whereas age group above 25 years ranked **net surfing at** 8, both the age group respondents rank **watching videos** at Rank 6 and sending **MMS at** Rank 10. That shows there are not many variations in the ranking preference in both the age group regarding mobile phone usage pattern.

Analysis of null hypotheses with respect to age wise usage pattern

$H_0 1$ There is no significant correlation in Age groups on usage pattern regarding mobile phones.

Table No.- 2
Analysis and Results

Null Hypotheses	Value of **Spearman's "r"**	Critical Value **Spearman's "r"**	Status of Null Hypotheses
$H_0 1$	0.745	0.6364	Rejected
			Source: Primary data

Interpretation of analysis

Table No.-2 shows that Value of **Spearman's "r"** is 0.745 which exceeds the critical value of Spearman's "r" (0.6364) for both Age groups; therefore there is no significant correlation in Age groups on usage pattern regarding mobile phones so hypothesis $H_0 1$ is not accepted.

Table No.3
Gender wise Rank Correlation table for usage pattern

S. No.	Usage Pattern	Male	Female
1	Social Networking	2	4
2	Email excess	7	9
3	Music	1	1
4	Games	8	6
5	SMS	3	3
6	Watching Videos	6	7
7	Clicking Photos	4	2
8	Taking Videos	9	8
9	MMS	10	10
10	Net Surfing	5	5

This table also shows that Gender group Male and Gender group Female are having significant correlation in their perception with respect to usage pattern regarding mobile phones.

As per the table No.3 of Rank correlation regarding mobile usage pattern gender wise shows that respondents of both gender group male and gender group female ranked **music at** 1, in the same way respondents of both gender groups ranked **SMS** at rank 2, **net surfing** at rank 5 and **MMS** at rank 10. Whereas gender group male ranked **social networking** at 2 and gender group female ranked **social networking** at 4. That shows there are not many variations in the ranking preference in both the gender group regarding mobile phone usage pattern.

Analysis of null hypotheses with respect to gender wise usage pattern

$H_0 2$ There is no significant correlation in Gender groups on usage pattern regarding mobile phones.

Table No. - 4
Analysis and Results

Null Hypotheses	Value of **Spearman's "r"**	Critical Value **Spearman's "r"**	Status of Null Hypotheses
$H_0 2$	0.891	0.6364	Rejected
			Source: Primary data

Interpretation of analysis

Table No.-4 shows that Value of **Spearman's "r"** is 0. 891 which exceeds the critical value of Spearman's "r" (0.6364) for both Age groups; therefore There is no significant correlation in Gender groups on usage pattern regarding mobile phones so hypothesis $H_0 2$ is not accepted .

Table No.5
Age wise Rank Correlation table for Features Needed

	Features Needed	Age<=25 Years	Age>25 Years
1	Picture quality	1	1
2	Best sound quality	2	5
3	High megapixel camera	3	4
4	Music player	6	6
5	Apps support	9	10
6	Large memory	5	3
7	Trendy looks	10	9
8	Touch screen	4	7
9	User friendly and Latest Operating System	8	2
10	Good Hardware	7	8

This table also shows that Age group less than 25 years and Age group more than 25 were are having no significant correlation in their perception with respect to features needed regarding mobile phones.

As per the table No. 5 of Rank correlation regarding mobile features needed age wise shows that respondents of age group under 25 years ranked **sound quality** at 2 whereas age group above 25 years ranked **sound quality** at 5, in the same way respondents of age group under 25 years ranked **User friendly and Latest Operating System** at 8 whereas age group above 25 years ranked **User friendly and Latest Operating system** at 2, the respondents of age group under 25 years ranked **large memory at** 5 and respondents of age group above 25 ranked **large memory** at 3, respondents of age group under 25 years ranked **touch screen** at 4 and respondents of age group above 25 ranked **touch screen** at 7 and respondents of age group under 25 years ranked **high megapixel camera** at 3 and respondents of age group above 25 ranked **high megapixel camera** at 4 That shows there are variations in the ranking preference in both the age group regarding mobile phone features needed.

Analysis of Null Hypotheses with respect to Age wise Features Needed.

H_0 3 There is no significant correlation in Age groups on **Features needed** regarding mobile

phones.

Table No. - 6
Analysis and Results

Null Hypotheses	Value of **Spearman's "r"**	Critical Value **Spearman's "r"**	Status of Null Hypotheses
H_03	0.624	0.6364	Accepted
			Source: Primary data

Interpretation of Analysis

Table No.-6 shows that Value of **Spearman's "r"** is 0.624 which is lower than the critical value of Spearman's "r" (0.6364) for both Age groups; therefore there is no significant correlation in Age groups on features needed regarding mobile phones hypothesis H_03 is accepted.

Table No.7
Gender wise Rank Correlation table for Features Needed

	Features Needed	Male	Female
1	Picture quality	1	1
2	Best sound quality	3	5
3	High megapixel camera	4	3
4	Music player	7	6
5	Apps support	9	10
6	Large memory	5	4
7	Trendy looks	10	8
8	Touch screen	8	2
9	User friendly and Latest Operating System	2	7
10	Good Hardware	6	9

This table also shows that gender group male and gender group female are having no significant correlation in their perception with respect to features needed regarding mobile phones.
As per the table No. 7 of Rank correlation regarding mobile features needed gender wise shows that respondents of gender group male ranked **sound quality** at 3 whereas gender group female ranked **sound quality** at 5, in the same way respondents of gender group male ranked **User friendly and Latest Operating System** at 2 whereas gender group female ranked **User friendly and Latest Operating** at 7, the respondents of gender group male ranked **touch screen quality at** 8 and respondents of gender group female ranked **touch screen quality** at 2, respondents of gender group male ranked **trendy looks at** 10 and respondents of gender group female ranked **trendy looks** at 8 and respondents of gender group male ranked g**ood hardware at** 6 and respondents of gender group female ranked **good hardware** at 9 That shows there are variations in the ranking

preference in both the gender group regarding mobile phone features needed.

Analysis of Null Hypotheses with respect to Gender wise Features Needed.

H_0 1 There is no significant correlation in Gender groups on Features Needed regarding mobile phones.

Table No. - 8
Analysis and Results

Null Hypotheses	Value of **Spearman's "r"**	Critical Value **Spearman's "r"**	Status of Null Hypotheses
$H_0 3$	0.503	0.6364	Accepted
			Source: Primary data

Interpretation of Analysis

Table No.-8 shows that Value of **Spearman's "r"** is 0.503 which is lower than the critical value of Spearman's "r" (0.6364) for both gender groups; therefore there is no significant correlation in gender groups on features needed regarding mobile phones so hypothesisH_0 4 is accepted.

V.   FINDINGS AND DISCURSION

It was found that different age group respondents had similar usage pattern. Respondents of different age groups have significant correlation in their usage pattern regarding mobile phones. Mobile phones user of both age group that is Age Group (less than 25 years) and (above 25 Years) are having similar usage pattern. Like result of the present study **Report by Macro (2004)** suggested that Mobile phone usage purchase is independent by age of the user.
After the analysis it was found that different gender group respondents had similar usage pattern. Respondents of different gender groups have significant correlation in their usage pattern regarding mobile phones. Mobile phones user of both gender group that is male and female are having similar usage pattern. Like the result of the present study **Patel (2011)** suggested that gender were not the influential factors in mobile phone usage. It was found that mobile phones users of all age and gender groups prefer music, social networking and SMS are the most used function. Like the result of the present study **Patel (2011) and Balakrishnan (2012)** suggested SMS is the most used options to socialize wit h friends and family.
The result of the study shows that different age group respondents had different mobile phone features requirements. Respondents of different age groups have no significant correlation in features needed regarding mobile phones. Mobile phones user of both age group that is Age Group (less than 25 years) and (above 25 Years) is having different preference regarding mobile phone features needed. The result shows the smaller age group respondents prefer more good quality picture, sound and camera as compare to the to the higher age respondents. Like the result of the present study **Liaogang et al (2007) and** M**alasi (2012) suggested** Most of the student's

preference was significantly influenced by the attributes of the product such as design, style, data storage and quality components.

The study shows that different gender group respondents had different mobile phone features requirements. Respondents of different gender groups have no significant correlation in features needed regarding mobile phones. Mobile phones user of both gender groups that is gender group male and female is having different preference regarding mobile phone features needed. The result shows male respondents prefer picture quality, user friendly operating system, good sound whereas the female respondents prefer picture quality, good touch screen and good camera. Like the result of the present study **Park et al (2009)** suggested that consumers prefer mobile phones slide/bar/swing forms with a touch-screen input system to a QWERTY input system

VI.   LIMITATION OF THE STUDY

Research studies, many a times suffers some limitations and this study was not the exception and may also suffer from following limitations:

- Respondents were limited to Major cities of Madhya Pradesh. There are chances for some deviations in generalized interpretation
- Sample size of 400 has been treated as large sample for the purpose of statistical analysis.
- Some deviation might get into the collected data due to the mental state of the respondents while filling up the questionnaire, though adequate measures to minimize the bias had been undertaken.
- Researcher had tried his best to incorporate as many promotion elements as possible but there are chances that very minor item may play good role in consumer buying behavior might be missed.

VII.   SCOPE FOR FUTURE RESEARCH

1. This study has much scope for future research. Some research can be done in more comprehensive way to generalize the results. The area of study can be extended and number of respondents can also be increased to arrive at a fine conclusion regarding the Consumer Buying Behavior
2. The data is collected through final respondents on. Some research can be done by taking views of different intermediaries of the mobile phone Industry.
3. Other Buying Behavior factors are also taken the future study that is not taken in this study.

VIII.   IMPLICATION OF THE STUDY

The present study suggested that customers aspire to own a good mobile phone with latest features. This leads towards massive competition in the market. It is now need of the hour for every mobile phone marketer and manufacturer to collect and analyze every bit of small information regarding their target customer. The study gives a deep insight about the consumer preference regarding mobile usage pattern and features needed   the impact of personal factors on

consumers.

These are the few suggested strategies for mobile phone companies, manufactures and marketers.
It was found that customers across all the groups prefer to have high resolution screen, powerful camera, user friendly operating large phone memory in their mobile phones. Companies need to address all these basic needs to win the customer's choice.

Customers of all mobile type feel excited to discuss about new mobile phone launches, newly purchased mobile phones, new apps and latest technological features with their friends and relatives. Mobile phone companies need to share information of all types regarding phones on the social networking websites like Facebook, Youtube, Twitter etc.

IX. CONCLUSION

The study was undertaken know the impact of personal factors (age and gender) on usage pattern and features needed of mobile phones. The data was collected from four hundred respondents from four citied of Madhya Pradesh. The research result that there is no significant difference in usage pattern of mobile phones in different age groups i.e. less that 25 years and above 25 years. In the case of different gender groups there is no significant difference in usage pattern of mobile phones found either. But when it comes to preference of features need in the mobile phones both age groups had different preferences. It was also found that both gender group male and female have different preference regarding features need in the mobile phones.

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