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A Study on the Factors Influencing Consumer's Purchase Decision towards Smartphones in Indore

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Abstract: *The second decade of the current century sees a sharp rise in the total number of mobile users in the country. This increase is the result of a new category of mobile phones namely Smartphones which had arrived in the market. Today, there are more than 27 million Smartphone users in urban India, which constitutes 9 percent of all mobile users in urban India. The major objective of this research is to identify the key factors which have a dominating effect on the consumers' minds while making a purchase of Smartphone. The collected data were analyzed and interpreted using chi-square, reliability analysis, Factor analysis, Confirmatory Factor Analysis. It was found that data is reliable for factor analysis. The measurement model suggested four factors price, brand preference, social influence and features having a dominant influence on the purchase decision of consumers in Indore.*

Keywords: *Smartphones, Measurement Model, Purchase Decision, Indore.*

I. INTRODUCTION

The term 'Smartphone', refers to a multimedia phone handset, which is a multifunctional electronic device that has features ranging from Camera, Audio-Video Playback, Web browsing to a high-density screen display along with several other multimedia options. As per Businessdictionary.com, Smartphone is a mobile phone which includes functions similar to those found on personal computers. Smartphone provides a one-stop solution for mobile calls, email sending, and Internet access. Smartphone is compact in size and often only slightly bigger than standard mobile telephones. A Smartphone is actually a mobile phone, based on an Operating System, which possess all the major functions of a Computer, like web browsing, emailing, video and voice chatting, audio-video playback, and others. A few years back, a Smartphone was a PDA (personal digital assistant) having the calling features like a mobile phone. But nowadays, the mobile phones possess the functionality of added media players, compact digital camera, GPS etc. Today, almost all the Smartphone's has a high-density screen resolution allowing the handset to display almost all the websites in their standard formats as they appear on the computer screens. Nowadays most of the websites are launching their mobile versions as well, and several applications which can be run on the Smartphone OS directly. For better connectivity, hi-speed data is also made available through WI-Fi, 3G and 4G data connections. In the past 2-4 years, the rapid development of mobile – applications has caused a birth of the new mobile applications market, allowing a lot of trade to happen through mobile platform as well, which has been a major reason for people to adopt the Smartphone.

The Smartphone Scenario in India

From being a gadget of luxury and sophistication, the Smartphone has gone on to become a broad-based phenomenon in the Indian mobile phone market. The numbers speak for themselves. Today, there are more than 27 million Smartphone users in urban India, which constitutes 9 percent of all mobile users in urban India. The numbers are higher in the large metros of the four million plus population with one Smartphone user among ten mobile users. Interestingly, even in smaller cities with a population of one lakh to ten lakh, the figure stands at an impressive 6 percent. These are the findings of the study “Smartphone Incidence in Urban India” conducted by Nielsen Informat Mobile Insights, amongst over 10,000 respondents in towns with one lakh plus population. With a base of 27 million users (and growing), insights into how consumers across cities and towns are using their Smartphones will go a long way in helping manufacturers, marketers and advertisers make strategic decisions. No longer can marketers (across the board) ignore the potential of this medium.

Based on a panel of Smartphone users, Nielsen Informat reports that 87 percent use it for running online searches followed by 80 percent for social networking. While 72 percent Smartphone users are chatting and using webmail, 59 percent stream video and use their devices for maps and navigation. Banking & finance, travel & shopping accounts for 30 percent of the usage. Accessing mobile television on a Smartphone is also an increasing trend in urban India - 25 percent use their phones for this purpose. The major players in Smartphone manufacturing in India are: Apple, Samsung, HTC, Blackberry, MicroMax, Sony and Nokia.

II. LITERATURE REVIEW

The research aims at finding the factors that majorly influence the buying decision of a customer while choosing a Smartphone. By reading the relevant literature, various factors have been found, based on which the consumer chooses the Smartphone. The previous researches provide a range of variables which affect the purchase decision, combining several dominant such variables, certain major factors can be drawn out. In the first quarter of 2012, Smartphone sales accounted for 34% of total mobile phone sales (Gartner.com, 2012). It is predicted that Smartphone sales will approach one billion units in 2015 (IDC.com, 2011). The Smartphone has revolutionized the way we do thing, the role Smartphone play in today’s society in phenomenal. Today’s Smartphone is taking the role of the computer, making it possible to do a lot with this small hand held device. It has a broad use such as sharing information, paying for products, browsing and shopping. Virtually every activity today has a Smartphone application for it (Mackenzie, 2006).

According to Cassavoy (2012), Smartphone can be defined to be a device that enables the user to make telephone calls and at the same time has some features that allow the user to do some activities that in the past was not possible unless using a computer or a personal digital assistant (PDA), such as sending and receiving e-mails, amending an office document etc. Nowadays brand plays a very vital role in consumer buying decision. While consumers usually go for a familiar brand, but the concept of brand transcend has emerged beyond a trademark or name. The concept of brand encompasses much more than a trademark. Based on the various journals, researches and articles; several dominant factors influencing a consumer purchase decision towards Smartphone can be drafted out. The variables under investigation in this study include product features, brand name, price and social influences.

A. Product Features: A feature is an attribute of a product that to meet with the satisfaction level of consumers’ needs and wants through the owning of the product, usage, and utilization of a product (Kotler et.al. 2007).

B. Price: Nagle and Holden (2002) stated that price can play a role as a monetary value whereby the consumers to trade it with the services or products that were being sold by the sellers. Price will always be the key concern of consumers’ before making any purchasing decision.

C. Brand Name: In recent changing global environment, competitive advantage, profitable ways and efficiencies are the most important gears that companies are forced to seek for in order to differentiate among them in the business world (Mei Dean

and White, 1999). Brand names are the valuable assets that help correspond quality and suggest precise knowledge structures which are related to the brand (Srinivasan and Till, 2002).

D. Social Influences: Social influences means one person causes in another to make a change on his/her feelings, attitudes, thoughts and Social behaviour, intentionally or unintentionally (Rashotte, 2007). It results from interacting with each other. Social influence includes the influence of media, parents and peers. Social Influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system (Venkatesh, 2002).

This research aims at identifying the key factors which have a dominating effect on the consumers' minds while making a purchase of Smartphone. Such researches have been carried out numerous times in foreign countries, especially the developed countries, but taking India into perspective, fewer studies have been performed. Mostly, the demographic variables have been given importance. The Smartphone market in India is in the growth stage, where people have started to move from conventional mobile phones to Smartphones. At such times, this study can provide fruitful information to the marketers regarding the consumer perception towards the Smartphones.

III. OBJECTIVES

This research is basically an exploratory research, where it is aimed to explain the relation between the four independent factors namely price, brand name, features and social influences on the consumers' purchase decision towards Smartphone. Primarily web articles, previous researches, journals, publications etc., were studied to find out the relevant information for building a conceptual base for conducting the research. Based on these concepts, the objectives were set, and the questionnaire was designed. Primary data were collected with convenient sampling of adult respondents covering varied socio economic classes and cultural groups. The sample of 250 respondents from mentioning strata was used. All the questionnaires were scrutinized and those with incomplete or unlikely responses were deleted, resulting in a sample size of 188. The collected data were analyzed and interpreted using chi-square, reliability analysis, Factor analysis, Confirmatory Factor Analysis with the help of Statistical Package for Social Sciences (SPSS) v17. 0 and AMOS v20.

IV. FINDING AND ANALYSIS

The reliability and consistency of the data that has been extracted in the study was examined through reliability test with *Cronbach's α* (alpha) as a coefficient of internal consistency. It is commonly used as an estimate of the reliability of the data for a sample of examinees. The Cronbach α value for the given set of sample was found to be 0.628. As per the ranges provided by George and Mallery (2003), Cronbach's Alpha value greater than or equal to 0.5 is considered acceptable. Indeed the value of Cronbach α as 0.628, shows that there is an acceptable internal consistency in the items taken in the study. Further, Bartlett's Test of Sphericity and KMO Measure of Sampling Adequacy were performed to confirm the suitability of the data for factor analysis. KMO and Bartlett's Test shows that the result of the Bartlett's Test of Sphericity is significant at 0.000 of p values, which meets the criteria of value lower than 0.05 in order for the Factor Analysis to be considered appropriate. Furthermore, the result of the KMO Measure of Sampling Adequacy is 0.574, which exceeds the minimum value of 0.5 for a good factor analysis.

TABLE 1
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.574
Bartlett's Test of Sphericity	Approx. Chi-Square	3131.868
	df	780
	Sig.	0.000

A. MEASUREMENT MODEL (CONFIRMATORY FACTOR ANALYSIS)

CFA is a technique used to estimate the measurement model. It seeks to confirm if the number of factors (or constructs) and the loading of observed (indicator) variables on them confirm to what is expected on the basis of theory. In order to test the measurement model the researcher freely correlate the four constructs and fix the factor loading of one indicator per construct to a value of unity. All measured indicators are allowed to load on only one construct each, and the error terms are not allowed to correlate with each other. The measurement model constructed in AMOS software is described in figure 1. The figure contains twenty three variables for purchase decision of consumers towards Smartphones in Indore.

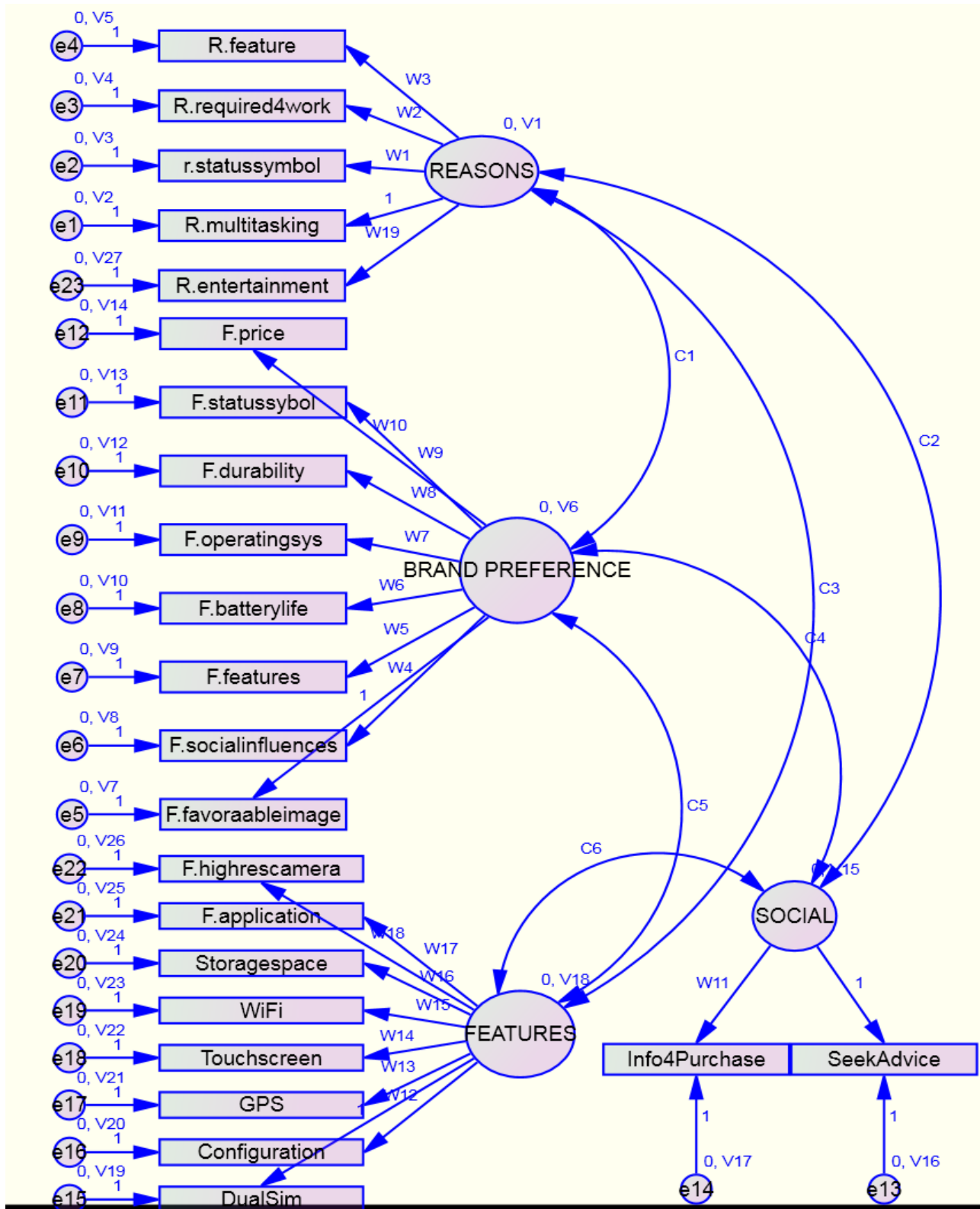


Figure: 1 Measurement Model

The overall fit statistics for the measurement model for 23 item goodness of fit statistics is summarized in table 2.

TABLE 2
Goodness of Fit Statistics

Degree of Freedom (df)	224
Minimum Fit function Chi-Square χ^2 (p=0.000)	706.761
Normed chi-square (χ^2/df)	3.155
Root Mean Square Error of Approximation (RMSEA)	0.108
Normed Fit Index (NFI)	0.475
Comparative Fit Index (CFI)	0.549

Values from the table 2 for the measurement model's goodness-of-fit for constructing the consumers' purchase decision towards Smartphone is determined. The chi-square (χ^2) value is 706.761 which is significant at $p < .0001$. Normed chi-square (χ^2/df), which is the ratio of chi-square to the degree of freedom is 3.155. Although it is greater than three - the limit defined for good fit by Bagozzi & Yi (1988) and Hu & Bentler (1999), but is classified under acceptable fit. The value of RMSEA is 0.108 which indicate that the model has a contribution of error thus indicating less good fit model. NFI values are 0.475 which is above the recommended value 0.90. CFI value is 0.549 indicating the measurement model is a good fit. Thus all the indicators of goodness of fit have a good fit in the measurement model. Therefore we can conclude that, the factors like Price, Brand Preferences, Features and Social Influences have a dominant impact on Consumer Purchase Decision towards Smartphones in Indore.

B. DOMINANT FACTORS

To find out the dominant factors possessed by each brand, which form the perception in the consumer's mind about the brand preferences, cross-tabulation tool is applied. This tool gives the result in the form of: Counts and percentage, Chi-square test, Cramer's V values. The chi-square test symbolically written as χ^2 can also be used to make comparisons between theoretical populations and actual data when categories are used. Thus, the chi-square test is applied in a large number of problems. The test is, in fact, a technique through the use of which it is possible for all researchers to (a) test the goodness of fit; (b) test the significance of association between two attributes, and (c) test the homogeneity or the significance of population variance.

TABLE 3
Preference of Smart Phone Based on the Responses

Order Of Preference	Price	Status Symbol	Durability	Operating System	Battery life	Features *	Social Influences	Favourable Image*
1	Samsung - 60.5%	Samsung, Apple 36.8% each	Samsung - 37.1%	Samsung - 55.6%	Samsung - 37.5%	Samsung - 46.9%	Apple - 57.1%	Samsung - 46.2%
2	Apple - 10.5%	Blackberry - 21.1%	Apple - 25.7%	Apple - 25.9%	Blackberry - 18.8%	Apple Sony - 18.8%	Samsung, Blackberry Sony - 14.3%	Apple, Sony - 19.2%
3	Sony - 10.5%		Sony - 22.9%	Sony HTC 7.4%	Apple, Sony Nokia - 12.5%			

* The scientific relation of this factor with Most Preferred Brand cannot be proved. As the level of significance is greater than 0.05

The Confirmatory Factor Analysis demonstrated the suitable appropriateness of the model, which confirmed the significance of Pricing, Features, Brand preferences, Social Influence as important factors which contribute to the purchase decision of the Smartphones. However, it has been noted that, price is not a key concern for the people using Smartphones. The reason might be that the convenience provided by the Smartphone is worthy enough, to pay even a little higher for a Smartphone. Social Influence acts for the Brands used by the people as a status symbol, specifically for Apple and Samsung products. Features have always been so important, as they form the product specifications and the consumers pay high attention towards the features of a Smartphone. The Smartphone is required by the Consumers in conducting several tasks like, browsing internet, handling documents, connecting to social networks etc., all of which makes a consumer purchase a Smartphone. Features of a Smartphone are also considered by a Consumer, as an important reason to purchase a Smartphone, like frequent use of internet, camera, office documents etc. On one hand, features act as a reason to purchase, on the other hand, features differ from brand to brand. Sony and MicroMax, both offer cameras, but the camera quality possessed by Sony is considered better than MicroMax and many other brands. Thus, features also act as differentiation factors in Brand Preferences. Several individual factors like Configuration, Storage Space, WI-Fi, GPS, Touchscreen, High- Resolution Camera, Applications were found to be considered highly important by consumers while looking upon the Feature of a Smartphone. Operating System also had a fairly good impact on the Brand Preference, making a weak but worth enough variables to be considered while establishing Brand differentiation. Consumers have also shown a tendency of relating their reasons to purchase the Smartphone with the Brand differential factors.

The most important factors by the major brands, shown as per their dominance, based on overall response, taken as a whole, generated from the sample population is shown in table 4.

TABLE 4
Important Factors By The Major Brands Preferred By Indore Smart Phone Users

Order of Preference	Apple	Samsung	HTC	Sony	Blackberry	Nokia
1	Social Influences, Status Symbol	Price, Durability, Operating System, Favourable Image, battery life	Operating System	Features, Social Influences, Favourable Image	Status Symbol, Battery Life, Social Influences	Battery Life
2	Price, Durability, Operating System, Features, Favourable Image	Social Influences		Price, Durability, operating System, Battery Life		
3	Battery Life					

Price is not a major factor for considering a Smartphone to purchase, as found in the study. So, the marketers can have a free hand at pricing the product initially at the launch, in order to generate quick profits. The study showed few such factors, where the marketers should focus in order to improve the overall performance of the Smartphone in the market. Durability has been a factor which was dominantly found only in APPLE, but not in other brands. Thus, in order to counter this impact of Apple, other market challengers like Samsung, Sony and HTC needs to work upon this factor. Battery Life has always been a big negative for all brands when it comes to using a Smartphone. It is only Nokia that has got a positive response in this factor.

The most dominant factors possessed by each brand, taken individually, based on the individual responses given by the responses generated from the sample population is shown in table 5.

TABLE 5
Most Dominant Factors Possessed By Each Brand

Apple	Samsung	Blackberry	Sony	Htc	Nokia	Micromax
Status Symbol, Durability , Operating system, Features, Social Influences	Price, Operating System, Features	Status Symbol, Battery Life Features	Durability, Features	Price, Durability, Operating system, Features	Battery Life, Features	Price, Features

The age groups didn't give an output having too much variation; there was only one unexpected output, that APPLE wasn't a preferred brand amongst higher age-groups. Whereas, Samsung and Blackberry had a consistent segment with Samsung being the most desired brands. Gender showed no significant difference when it came to the most preferred smartphone brand. The result was same; Apple, Samsung, HTC, and Blackberry were the most desired brands in both segments. More than half of the present users of Apple, Samsung, Sony and Blackberry have shown interest in retaining their current brands as their future brands. Apple has been chosen as the future brands by a large chunk of Samsung, HTC and Blackberry users. Samsung has been chosen as future brand by HTC, Blackberry, Nokia, MicroMax, and a part of Apple Users as well. A small segment of Apple, HTC, MicroMax, and Samsung has shown interest in both Sony and Blackberry. The new users to purchase a Smartphone for first time in coming future, around half of them have shown interest to purchase a Samsung Smartphone, one-third showed interest in purchasing Apple, the remaining was inclined towards Sony and Blackberry.

V. CONCLUSION

A new electronic gadget by the name of Smartphone is rapidly becoming an essential part of the life of new generation users of mobile. The versatility of this instrument is resulting in the exponential rise of its market share. The study using the confirmatory factor analysis model concluded that people in Indore are buying Smartphones irrespective of its prices. Other features like brand, social image, technology and durability are playing major role in buying decisions of consumers in Indore. It is important to highlight that the results of this paper can provide new marketing dynamics to the leading mobile companies for a market, that is very soon be contributing a major share in the revenue of these companies.

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