

A Study on: Attitude of Indian Customers towards Smartphones of Android and Windows Version

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Abstract

Indian youth has a strong inclination towards the gadgets with preference for latest software. The factor of success for smartphones over the years has been not only in their ability to run well, but also to give access to extended capabilities via third-party apps. A customer attitude model is being developed through the variable taken as service quality, service value and service involvement is being designed and validated through the empirical method of factor analysis by using the questionnaire of sample size 400 technical and non-technical students and executives in India. The SEM of customer preferences has developed through the factor analysis of 20 statements about the different smartphone companies.

Keywords: Factor; Eigen value; SEM; Smartphone; Android; Windows

Introduction

The Smartphone has been in the market since 1993 but Apple introduced the smartphone since last six years. Early Smartphone's were too much expensive for general consumers therefore predominantly meant for corporate users and used as an enterprise devices [1].

The Smartphone era started with the phase purely meant for enterprises. During this phase all the companies were designed the Smartphone as per the corporate requirements and targeting to the corporations. In 1993 the era began with the advent of smartphone 'Simon' which was the first smartphone. Blackberry as the revolutionary device of this era had introduced many features like email, internet, fax, web browsing, camera etc. This phase was mostly focused on targeting enterprises. The second phase was the iPhone Smartphone era started with a major breakthrough Smartphone market in 2007 which was first time ever industry introduced the Smartphone for general consumers. Google introduced Android Operating System smartphone with the intention to approach the consumer market at the end of 2007. Google emphasised more on features like email, social website, audio, video and internet access that mostly liked by general consumers at a very low cost. Third phase of Smartphone was mainly targeted to reduce the gap between enterprise customer and general consumer requirements by improving the display quality, technology, stable the mobile operating system, more powerful batteries and enhance the user friendly operating system etc. The smartphone market today is very much challenging as very few manufacturers experiment with new technologies and are giving importance to packing phones with ever-impressive specifications and trying to improve the individual components to make a unique one. Smartphone displays are enhanced to 1080p resolution, digital cameras on higher megapixel density, higher storage capacity and higher processing power is approaching towards the technology of personal computers.

During the initial years of wireless telephony in India, customers had a limited choice in terms of handsets. The majority of handsets were imported by a handful of global handset players present in the market. The cost of both the handsets and wireless services were beyond the reach of low-income users. Handsets then were fairly basic, which enabled users to primarily access voice services and limited data services such as short messaging service (SMS). Over the years, this scenario has changed dramatically with a wide variety of handset

choices for customers. The growth in the number of handset players accorded mainly due to a rapidly expanding telecom market combined with low production and marketing costs. Customized low-cost, feature-rich smartphone has become more mobility and useful than ever before. Smartphone works together with the application software of social networking tools hence, new technology tethering is the process of connecting secondary devices to the internet via a shared connection of a smart phone, either by setting up a personal Wi-Fi hotspot or by using a USB cable to connect (or tether) the devices. Tethering has been a complex and pressing issue for many operators not in India but globally due to an inherent lack of understanding of its impact on usage behavior and the undetermined potential impact on the profitability. Clearly, the ability to connect multiple devices to a single cellular plan could significantly raise the ceiling of the potential usage demand of any given customer. During the period 2010-2015, the number of wireless subscribers in India is expected to increase at a CAGR of 11.2% to reach 1.2 billion subscribers by 2015. A majority of the new subscriber additions is expected to be from the semi-urban and rural areas, driving down the average selling price (ASP) of handsets [2].

Scenario of smartphone in international and national market

With the contraction of market share of industry, Samsung Electronics Co. Ltd continued to be the market leader in the Asia-Pacific region with a 24% market share in the Smartphone segment, even though its shipment growth was lower than the industry average. According to the industry analysts the company has been trying to maintain its first position in the Indian market as it faces a "real possibility" of losing its position to home-grown brands.

Micromax Informatics Ltd, came second in the smartphone market, announced a strategic partnership for mobile phones with Intel Corp.

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Lava International Ltd. which was the fastest-growing handset vendors remained with the third spot with its two variants Lava and Xolo. Motorola Inc. was tried to retain its position among the top five vendors with its fresh line-up of second generation handsets of the company.

Majority of the Smartphone users change their phones within 12-24 months. Phablets, the Smartphones with 5.5-6.99 inches screen size, contributed 6% to the overall Smartphone market. On the other hand, Smartphones with screen sizes between 4.5 and 5.5 inches are seen as the sweet spot for consumer preference [3].

Consumer behavioral shift on the basis of version

Indian mindset was not positive towards windows smartphones. Windows Phone with operating system 7.5 and 7.8 lacked basic features in smartphones. Many features of windows 8 are not available in with the operating system but available with the android operating system which created problems in India. People diverted from Windows Phone towards low-cost Android for more user friendly OS. Android users account to about more than 90% of the total smartphone users in India which is still growing for it. Android users are too possessive towards their operating system and always talk about the merits of the device which take Windows Phone out of the picture. They try to rule out all the other platforms because of the limitations forced by Microsoft. Indians are pretty budget orientated people and very much inclined towards buying a smartphone of low-price. Local companies like Micromax and Karbonn tried to get over to capture the market but were unsuccessful because of limitations of after sales services [4].

In 2008 with the upgrades in the mobile operating system in Apple iOS, Android and Blackberry OS were concentrating to bring features both in operating systems and devices which will provide exciting feature to enterprise and general consumers. The market of Android has been captured most area during this time period and provided a greater opportunity to build devices using Android technology [5].

Objectives

Keeping in view of the above discussion the present study has made an attempt to study the key features and service attributes which are responsible for the perceptual change of Indian customers. Also to study the innovative features of different brands of smartphones are responsible for the change in perception of Indian customer. The objectives are mostly a) to study the profile of customers using smartphones b) to study the factors responsible to select the smartphones on the basis of android or windows and c) to know the relationship of demographic profile with android or windows smartphones.

Research Methods

Sampling procedure used for this research is mostly convenient one. Secondary data are collected from the different sources like electronic and print medium respectively and articles are mostly from published journal. Primary data are collected from the respondents of technical and non-technical students and executives who are mostly young through questionnaire method of sample size 400 during the period of 2014. Twenty statements are taken in Likert scale by considering the different variables responsible for decision making through pilot survey. Factor analysis and Structural Equation Modeling are being used for the data analysis through SPSS and AMOS package respectively.

Literature Review

Consumer buying decisions are mostly affected by the branding strategies of the companies. Consumers always feel comfortable with

familiar brand and several dominant factors in the market influence a consumer purchase decision. This research aims at identifying factors which have a dominating effect on the consumer decision making process for a purchase of smartphone. In this perspective less research work has conducted in India with comparison to other developed countries. Smartphone market is in the growth stage in India where people have started to move from conventional mobile phones to smartphones. This study today can be able to provide fruitful information to the marketers regarding the consumer perception towards the smartphones [4].

The changing scenario of global marketing is shifting global marketers their focus from transaction based marketing which aim at aggressive selling to more interactive relation by strengthening marketing to build and nurture close associations with customers [5]. Gronroos [6] gave the most comprehensive definition of relationship marketing is to create, preserve and improve relations with customers and other partners by mutual exchange and fulfillment of promises. The major objective of relationship marketing is to promote customer loyalty which according to Oliver [7] is the strong commitment of customers to re-buy products in spite of wide product differentiations in the market. Few characteristics as suggested by Blomqvist [8] like treat each customer as individual person, direct all activities to present customers, implement strategies in interactive manner and strengthen customer associations for better customer loyalty. Loyalty is defined as lasting of commitment of friends, family and country to a particular source. However according to [9] it is believed that this concept primarily got into the marketing area by giving stress on brand loyalty. The long term loyal customers are more profitable as the basic assumption of marketing to which [10] recommended that it can be achieved by a series of steps. This start with customer's perceived value which defines the customer satisfaction in turn leads to strengthen the relationships last longer and eventually become more profitable. According to Morgan and Hunt [11] it is less costly to retain an existing customer than to get hold of a new one. Wetsch [12] suggested that behavioral data is usually used in marketing to appraise the customer loyalty because its collection is easier and less costly to obtain but it is not sufficient to differentiate between real and fake loyalty. Loyalty is a condition where customers prefer to stick to the brand in spite of ever changing market conditions. If customers' loyalty to the brand is the core of a brand's equity then the assessment of the connection to a customer towards a brand is called brand loyalty. When the present brand makes few changes in products' price or features it signifies the likelihood of a customer to shift to some other brand. As the customer loyalty increases on a particular brand then susceptibility of the customers to competitors' action diminishes. Even though a rapport building type of marketing approach is long-standing by nature transaction marketing is more short term goal oriented and is to earn customers while of relationship marketing is to maintain, retain and sustain customers [13].

Several studies conducted by the researcher to know the demographic characteristics of smartphone users. Hispanic Americans and Asians are slightly more likely to have a smartphone than what their share of the population would indicate [14]. The smartphone user tends to be younger than the general cell phone audience. Young people indicate a higher satisfaction level with texting than older people in terms of functions of smartphone [15]. Graziano and Tobin [16] defined agreeableness as "a compassionate interpersonal orientation described as being kind, considerate, likable, helpful and cooperative". Devaraj et al. [17] found that agreeableness is positively correlated with beliefs perceived through technology. Ehrenberg et al. [18] on examining young people's use of technology found that disagreeable individuals spend more time on calls and disagreeable individuals with lower self-

esteem spent more time using instant messaging and showed stronger instant messaging addictive tendencies. Phillips et al. [19] explained that young people low on agreeableness were more likely to use their phones to play games.

Conscientious people are more likely to carefully consider ways in which the use of technology would allow them to be more efficient and perform at a higher level at work [20]. Devaraj et al. [17] found that conscientiousness moderates the relationship between perceived usefulness of technology and intention to use technology such that the relationship was stronger for individuals with higher conscientiousness. Extraverts are described as being sociable, gregarious, and ambitious. They are optimistic and seek out new opportunities and excitement [21]. Those high in extraversion are social, active, and outgoing, and place a high value on close and warm interpersonal relationships [22]. Extraverted personalities are particularly high performers in jobs with a social component, such as management and sales [23]. Extraversion is also associated with effectiveness in a team setting and with greater training proficiency [20]. Devaraj et al. [17] found that extraversion moderated the relationship between subjective norms and intentions to use technology such that the relationship is stronger for individuals with higher extraversion. Ehrenberg et al., [18] found that extraverted individuals spent more time texting.

Androulidakis and Kandus [24] correlated the brand of mobile phone to users' security practices and explained users show different behavior in an array of characteristics of the mobile phone brand used by them. Jonathan, Lee et al. [25] analyzed the mobile phone service market indicates support for the moderating role of switching costs. Muhanna et al. [26] aims at investigating students' attitudes towards the learning environment where cell phones are used as learning tools in classroom and also reveals that cell phone has more influence on male students than on female students. Nasr et al. [27] identified that people are interested in having exclusive product which is not available with any other brand. Nasr Azad et al. [27] stated that customers select their products based on brand on purchasing intend for cellular phones. Mehran Rezvani et al. [28] investigates the impact of Word of Mouth on consumer based brand equity. Mokhtar et al. [29] explored the relationship between service quality and customer satisfaction on customer loyalty with regards to mobile phone usage. Shakir Hafeez and Hasnu [30] stated that customer loyalty in mobile sector is relatively low because new players are entering in this market and customers are more fascinated to try the new service providers. Chakraborty and Sengupta [31] explained the different aspects of prediction of switching proclivity of customers from one service provider to another. Harsha de Silva [32] generally showed that adoption of mobile phones has significant benefits not just to the customers but to the community at large. Arvind Sahay and Nivedita Sharma, [33] focused on peer influence, family influence, and brand relationships affect the switching intentions amongst young consumers from one brand to other.

Hawkins et al. [34] in their study "Consumer Behavior: Building Market Strategy" defined attitude as an organization of various psychological processes which include motivational, emotional and cognitive processes relating to a particular aspect in the environment that gives a favorable or unfavorable attachment towards that aspect of the environment. Pride and Ferrell, [35,36] further pointed out that attitude refers to the knowledge we possess and the positive or negative feelings we have about an object or an activity [37,38].

Results and Interpretations

Profile of respondents

- Out of 400 respondents, 20% of respondents came under the income less than 10k, 31.75% of respondents came under the income 20k-30k and 23.75% of respondents came under income 10k-20k. 61.75% of respondents came under the age 20-25, 18% of respondents came under the age 25-30 and 12% of respondents came under age 30-35 (Table 1).
- About occupation 53.75% of respondents came under the occupation of salaried employed, 41.25% of respondents came as students. 63.5% of respondents came under the family size of 2 + 2 (Husband, Wife and two children or two brothers or sisters having parents), 30.5% of respondents came under the family size of 2 + 1 (Husband wife and one child or son or daughter having parents) and 3.0% of respondents came under the family size of 2 (Newly married couple) (Table 2).

Profile of respondents using smartphones of different version

- Out of 135 respondents, 90.37% of respondents were using smartphone.
- Out of 135 respondents, 48.15% of respondents were using Android and 34.07% of respondents were using Windows version (Table 3).

Factor Analysis

The study has been made to know the attitude of Indian customers towards Smartphone of Android and Windows version. The questionnaire contains twenty statements with Likert scale technique which are generated through the pilot survey to measure attitude of respondents. The total variance accounted for by all the five factors is 72.784% which is quite high and it establishes the validity of the study (Table 4).

The Table 4 depicts the variables under each of the seven desired factors. The first factor F1 identified with the number of service centers, Manufacturer brand name, network technology, Wi-Fi ranges and customization in services. The factor F1 is termed as "Service" factor. The second F2 factor explains the durability, size, weight, screen size and processing power. These are the core part of the smartphone which is the common expectation of any customer while purchasing the smartphone in any shop. The second factor F2 is termed as "Physical Appearance" factor. The third factor F3 explains the availability of BBM (Black Berry Messenger) and VPN (Virtual Private Network). So the factor F3 is termed as "Connectivity" factor. The fourth factor F4 explains the WPS office and drop box. So it is a service facilities associated with the factor 4 which is termed as "Accessibility" factor. The fifth factor F5 explains the Operating system and internal storage which is associated with the safety part of the customer. The factor F5 is termed as "Capacity" factor. The sixth factor F6 explains the hardware design, cost with feature and camera quality. So the factor is

Income	No of respondents	Percentage	Age	No of respondents	Percentage
<10k	80	20	20-25	247	61.75
10K-20K	95	23.75	25-30	72	18
20K-30K	127	31.75	30-35	48	12
30K-40K	48	12	35-40	14	3.5
40K-50K	40	10	40-45	11	2.75
60K+	10	2.5	45-50		0
			50+	8	2

Table 1: Demographic profile on income and age of respondents.

OCCUPATION	NO OF RESPONDENTS	PERCENTAGE	FAMILY SIZE(2+)	NO OF RESPONDENTS	PERCENTAGE
BUSINESSMEN	8	2	0	12	3
PROFESSIONAL	12	3	1	122	30.5
SALARIED EMPLOYED	215	53.75	2	254	63.5
STUDENT	165	41.25	3	5	1.25
			4	4	1
			5+	3	0.75

Table 2: Demographic profile on occupation and family size.

Type	No of respondents	Percentage	Version	No of respondents	Percentage
Others	24	6	Android	254	63.5
Smartphone	376	94	Windows	86	21.5
			Blackberry	24	6
			Apple	25	6.25
			Others	11	2.75

Table 3: Profile of respondents using smartphones of different version.

termed as “Value” factor. The seventh factor F7 explains the look of the smartphone and hence it is termed as “Looks” factor (Table 5).

According to the ranking the highest scored factors can be known from the Total factor loading data. In the Table 5 customers have given highest priority to the factor like “Service” (Factor Loading: 3.392) followed by physical appearance, value, accessibility, connectivity, capacity and looks respectively (Figure 1).

Structural equation modeling

The factor data has been taken to design the structural equation modeling to verify the importance of each factor in terms their correlation. In the Figure 1 factor “Serv” represents “service”, “PA” represents “physical appearance”, “Con” represents “connectivity”, “Access” represents “accessibility”, “Cap” represents “capacity” and “Val” represents “value” respectively. The statements in structural equation model (SEM) are represented on s1-s20 respectively with the correspondence correlation with their respective factors. The correlation among each factor is very low which shows the exclusiveness of each factors among them and the correlation between variable to its respective factor is very high which shows the highly correlated variables being taken for the study.

Concluding Observation

The profile of customers taken for this research is mostly young of age group 20-35 years (91.75%) and is mostly students or executives. 94% of the respondents have android mobile user which shows there is a high inclination towards android platform. Through the factor analysis it can be observed that the major factor responsible for selecting any brand of smartphones are “service” followed by “physical appearance” followed by “value”. The factor “service” comprises of service centers, brand name, network technology, WIFI ranges and customization in services. The second factor which is equally responsible for change in attitude is “physical appearance” which comprises of durability and reliability, screen size, weight, size in terms thick and thin of the smartphone. The third factor “value” which comprises of hardware design and features, cost associated with features, camera quality in terms of pixel. SEM has given the idea about the exclusiveness of each factor in terms of low correlation values among the factors and high correlation of each variable with its respective factors. This exploratory study signifies that the highest customers’

preferences are towards the android smartphone because of its user friendly attributes accepted by customers with comparison to windows one.

Limitations and Directions for Future Research

The sample which has taken may not be the replica of the population of India. It is a convenience sample of young minds both students and executives of Bhubaneswar state capital of Odisha (Eastern State of India) and prediction is on the basis of this territory only. The dimensions considered here for the factor analysis are limited to the pilot survey conducted in Bhubaneswar only. The research mostly highlighted the quantitative part of the survey not the qualitative one. A study with a bigger sample from different parts of India can be recommended for further research. Other research applications can be applied to know the consumers’ importance for each variable related android and windows platform.

Executive Summary

Purpose

The purpose of the research is to know the attitude and acceptability of windows and android versions of smartphones.

Design/methodology/approach

A customer attitude model is being developed through the variable taken as service quality, service value and service involvement is being designed and validated through the empirical method of factor analysis by using the questionnaire of sample size 400 technical and non-technical students and executives in India.

Research limitations/implications

Convenience sampling used from two smart cities of technical and non-technical students and executives which comprises most characteristics of Indian consumers. A study with different sample size and from different parts of India can be suggested for further research.

Practical implications: In order to sustain in the market variable strategy should be adopted to make user friendly OS with latest technology, innovative branding, new positioning strategies flexible service benefits to retain its brand image.

Originality/value: This study has passed through both of the factor analysis and SEM which has given idea regarding the importance of different attributes in both windows and android versions of smartphones.

The SEM of customer preferences has developed and the factor analysis done by taking the response through 20 statements of different variables about the different smartphone companies. The different positions of smartphone companies are reflected on the model on the basis of customers’ priority for the operating systems. Customers have given highest priority to the factor like “Service” followed by physical appearance, value, accessibility, connectivity, capacity and looks respectively.

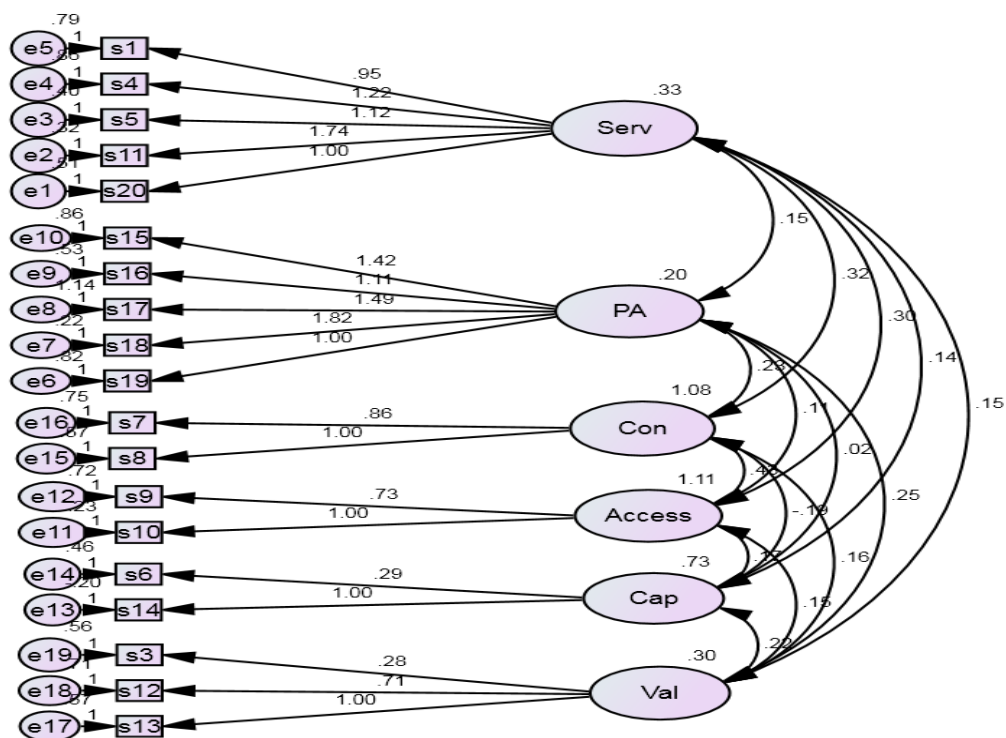


Figure 1: Relationship of factors with each respective variable.

Service (F1)	Selection of Smartphone depends upon the number service centers (s1)
	Manufacturer brand name is necessary to select a Smartphone (s4)
	Smartphone depends on the network technology GSM, CDMA, 3G, 4G (s5)
	It provides a good WIFI ranges (s11)
	Selection of Smartphone depends on the customization in services (s20)
	Selection of Smartphone depends on the durability and reliability observed by the friends (s15)
Physical Appearance (F2)	Selection of Smartphone depends on weight (s17)
	Selection of Smartphone depends on Screen size (s18)
	Selection of Smartphone depends on the processing power in MHz (s19)
Connectivity (F3)	Selection of Smartphone depends on the available BBM in Smartphone (s7)
	Availability of VPN in Smartphone (s8)
	You prefer this brand because of WPS (Wi-Fi Protected Setup) Office (to open PDF files, Power point files, word files (s9)
Accessibility (F4)	This smart phone has drop box where you can save your CV, document, large files (s10)
Capacity (F5)	Selection of Smartphone depends on the operating system and interface (s6)
	Selection of Smartphone depends on the internal storage space utilized for services (s14)
	Selection of Smartphone depends on the hardware design and features (s3)
Value (F6)	Most of the selection based on the cost with features (s12)
	Selection of Smartphone depends on the camera quality in terms of pixel (s13)
Looks (F7)	Most of the Selection of Smartphone depends on the looks (s2)

Table 4: Factors with respective variables for attitude development

Factors	Total Factor Loadings of Each Factor	Ranking of Factors
F1 (Service)	3.392	1
F2 (Physical Appearance)	3.165	2
F3 (Connectivity)	1.561	5
F4 (Accessibility)	1.669	4
F5 (Capacity)	1.495	6
F6 (Value)	1.802	3
F7 (Looks)	0.903	7

Table 5: Ranking of factors on highest factor loadings.

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