

Practices on Mobile Phone Apps Among Digital Natives in India

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Abstract : The objective of the undertaken study is to recognize consumption of mobile phone apps and approach concerning assortment and use of apps among digital natives in India. This paper discourses upon the following areas: the practicing approach of people regarding mobile phone apps, preferences of users and the reasons behind them, the most frequent problems that consumers encounter when using mobile phone apps, factors that establish user gratification when using mobile phone apps, factors that determine buying intent for paid mobile phone apps and ways in which mobile phone app users define apps that are worth for money. Interviews of youth among the age group of 21-30 years were conducted through purposive and snowball sampling. Privacy and online security of apps is important for this generation of digital natives who make the most use of their smartphone by spending time mostly on apps.

IndexTerms - Mobile Phone Apps, Digital Natives, Paid Apps, User Gratification, Smartphone, Online Security.

I. INTRODUCTION

About 2.5 million Android apps were available presently (AppBrain) whereas there were more than 1.8 million apps in the iOS App store (Statista) and about 669k Windows apps accessible on Windows store(Microsoft). The rapid emerging market place of mobile apps is the cause for numerous brands progressively holding ground in this area to create revenues and associate with users. The global mobile app downloads added up to nearly 2.52 billion in 2009. This number reached 268.69 billion in 2017. Studies have revealed that the revenues generated by mobile app suppliers largely were just about 88 billion U.S. dollars in 2016 (Statista).

This study concentrated on youth who are either students or professionals in the age group of 21-30 years and use smartphones, to observe their approaches towards mobile phone apps and their usage. This benefit in understanding of their day-to-day practice of usage of mobile phones and apps for industries to know their clients and produce apps which will truly be beneficial to their consumers and turn out to be vital in their routines.

II. REVIEW OF LITERATURE

As mobile phones sort life appropriately for its user, functioning along with numerous application software, the need for smartphones has considerably augmented with time and the need for apps burgeoned than before along with it. The software based apps function on smart phones and tablets are functioned to carry out precise actions. These apps connect within moments and are largely free or have minimal charges.

Additional benefit that offered is that they are every time accessible to every person and therefore, their approachability is enormously worthy. (Randolph, 2013) Phone apps can be traced back to the invention of the mobile phones. The earliest identifiable apps developed from early personal digital assistants (PDA) which worked programmes like database, word processor, diary and spreadsheet. Afterwards several improvements paved way for the establishment of different varieties of apps.

This study uses theoretical framework of attitude to study the practices on mobile phone apps. Attitudes are learned predispositions before, during or after a purchase (Schiffman & Kanuk, 2008; Gordon W Allport; Wright, 2006). Theory of reasoned action states that attitude is influenced by belief which in turn shapes behavioural intention (Lu, Hsu, & Hsu, 2005). The theory of reasoned action states that behavioural intentions are determined by attitudes to subjective norms and behaviours (Colman, 2015). According to this theory, individual behavioural intention is an outcome of two variables that are the social influence perception by an individual on if he/ she must perform or not perform a certain type of behaviour and the approach concerning behaviour. The societal motivation has been considered to be a particular standard.

The objective of this study is to recognize the psychological practice of users' decision-making regarding phone apps. To attain this, the theory of planned behaviour has been considered as the elementary idea. This theory relates behaviour and opinions and describes that an individual's judgment to take an action and the control that he or she believes he or she has over their behaviour directly effects his or her behaviour (Baek, 2013). To state in simpler words, it asserts that the approach concerning subjective norms, behaviour and observed behavioral control shape a person's behaviour and behavioral objectives in all.

The attitude of consumers, in turn also depends on how much competition already exists in the app market, which therefore, affects the purchase intention (Porter, 1974). In addition to all these factors, consumers are also interrupted during the purchase process by the external environment as well as internal impulses (Jaafar, Lalp, & Naba).

The types of smartphone apps can be classified as:

1) Paid applications – The users have to pay a certain amount of money for downloading and gaining access to these kind of applications and are payable through debit card/credit card/ net banking/mobile wallet etc. Such applications are not very favorable among Indians, as they mostly desire making use of free apps instead. (Business Standard, 2013).

2) Free applications – Such applications are free and no fee is required to be paid for downloads or any such of uses. These applications are either non-revenue focused or generate revenue through other forms such as in-app advertising and funded content. Such apps account for about 90 percent of total mobile app store downloads (Business Standard, 2013)

3) Freemium – The initial version of these apps is accessible free while some amount is charged for the enhanced version. The foremost target of the app developers of such kind of apps is to interest people keen on downloading these apps and make them to try them out to convert some of those users into purchasing the enhanced version.

The undertaken study is more of an applied research. Thus, the gaps in the applied parts are talked about in this paper. So, objective of this study is to know how phone apps are used by people and what is the approach to selection and usage of apps. This study attempts to discover the users' purpose of usage and recurrent consuming intent. The objective is to find the key worth factors for an individual user of mobile phone apps (these may be reasons such as ways of treatment of apps or concerning education etc.). In addition, which one is preferred more and reasons when it concerns mobile phone apps and websites. Based on the objectives research questions were formulated as:

1. What is the behaviour of people while using mobile phone apps?
2. What is preferred more and reasons- apps in various categories?
3. What are the frequently encountered problems when using apps?
4. What are the factor that constitute user gratification?
5. What motivates buying purpose for chargeable mobile phone apps?

III. RESEARCH METHODOLOGY

This research is an exploratory study to recognize practice of smartphones among digital natives in India. Every respondent in the study used a smartphone and had downloaded several apps. The respondents are digital natives, in the age group of 21 to 30 years of age. The respondents were initially contacted to share the screenshot/s of their mobile phone screen with all the downloaded apps. Using these screen shots number of apps were tabulated and categorized. A few initial questions were asked about usage of apps throughout the categories. Table 1: App categories, displays the categories of apps and their explanation.

Table 1: App categories

Categories	Description
Entertainment	This classification of apps comprises of all the apps that are serve entertainment uses like watching movies or TV shows, listening to music, reading or spending time by looking at viral images and jokes. Examples of popular entertainment phone apps are Talking Tom Cat, Meme Generator Free, Solo 2, Saavn, Shazam, Discovery News, Apple Music, 8tracks, Flipboard and Magzter.
News	The apps that appear in the news classification emphasize on daily events of the world. Some examples of such apps are Times of India, News and Weather, The Hindu, inshorts, Financial Times, Business India.
Social networking	This comprises of interactive communication tools that are centered on the internet and usually take care of the capturing, storing and presentation of communication, in the written format and in the visual such as video and images or audio setup as well. Generally the arrangement of such apps is a mix of these formats like YouTube is mostly a mix of video and audio whereas WhatsApp is largely text but also provides the option of sharing audio, video as well as graphics/ images/GIFs via it's server. Some examples in this category are Facebook, Twitter, Pinterest, LinkedIn, YouTube and WhatsApp
ecommerce	These apps differ in category from fashion associated e-commerce apps to travel bookings or events such as concerts or stand-up comedy shows. As these apps include financial communications amid the two involved parties, a tremendously significant concern is the security they provide when a transaction is being carried out. Some examples of these apps are bookmyshow, Flipkart, Amazon, , Snapdeal, Myntra, Jabong, Foodpanda, Freecharge, Faasos and Paytm.
Utility	The utility category apps directly help in the functioning of the phone. Some examples of phone apps that fall under this category and are external are Voice recorder, Chrome, Powerpoint, Microsoft Office, Google Maps, CamScanner, Dropbox, Evernote. Some apps that are internally built are Battery optimiser, Inbuilt phone's themes, Power clean and Clock. Since these apps are usually inbuilt and are rarely ever downloaded, this group will be ignored in the study.
Educational	Apps in this classification teach or help in refining some skill. Examples of such apps are edX, Lumosity, courser, Swayam etc.
Gaming	A Gaming app offers engagement and amusement to its consumers and is accessible to people either online or offline. They are constantly interactive and can also be social or solo, knowledgeable or action focussed or just entertainment. Examples of gaming apps are, Candy Crush, Logo Quiz, Quiz Up, PubG and FIFA.

Respondents for the undertaken study were enlisted depending on the number of apps on their phones - at least 30 to 40 apps and uses of apps. Snowball and Purposive sampling techniques were made use of for selecting respondents. To find and approach respondents who had basic knowledge about apps and understood their app practice behaviour, purposive sampling approach was used to find participants from the researcher's social circle. After the conclusion of the twenty five interviews, the respondents were asked to find and recommend other possible respondents from their social network who fulfilled the inclusion criteria.

The sample was drawn from students and professionals for the interviews. The in-depth interviews were recorded once taking consent from the respondents. The responses of the members were then transcribed and used for study and to measure elaborate insights for the study. The interrogations of the interviews were designed in a very manner that helped gauge the user's perspective and daily app usage patterns thoroughly. The analysis methodology used for thorough interviews was thematic content analysis. One hundred in-depth interviews were carried out from December 2017 to January 2018.

IV. RESULTS AND DISCUSSION

Table 2: Type of smartphone used and number of apps on smartphone.

Smartphone brand	OS	Internal Memory (GB)	Total apps on smartphone	No of apps in use
Samsung S7	Android	32	105	35
Oppo	Android	32	67	19
Samsung Note 7	Android	32	82	16
Samsung Note 5	Android	64	131	38
Samsung S8	Android	32	61	17
iPhone 8	iOS	64	50	19
Vivo	Android	32	48	19
iPhone 8s	iOS	128	55	21
Motorola G7	Android	64	102	31
Vivo	Android	32	98	26

On an average, the age of users was 25 years. Sixty of them were students and forty of them working professionals. Eighty of them used smartphones with android operating system and twenty of them had iPhones. There was an identical depiction of girls and boys among the users. The users had close to 80 apps downloaded on their smartphones. An average of 24 apps were used frequently. Findings Table 3: Total number of apps downloaded and apps in use across categories shows the total number of apps downloaded versus the number of apps used by the users.

Smartphone brand	Internal Memory (GB)	1	1a	2	2a	3	3a	4	4a	5	5a	6	6a	7	7a
Samsung S7	32	21	10	5	1	14	8	12	1	43	8	0	0	10	7
Oppo	32	5	3	4	0	13	6	11	5	29	5	1	0	4	0
Samsung Note 7	32	3	1	9	1	14	6	24	2	25	4	4	2	3	0
Samsung Note 5	64	8	4	5	2	14	7	23	5	75	19	4	1	2	0
Samsung S8	32	2	1	3	3	14	4	10	2	27	6	0	0	5	1
iPhone 8	64	3	1	4	2	10	5	2	1	23	9	5	1	3	0
Vivo	32	2	1	2	0	11	6	5	1	24	10	3	0	1	1
iPhone 8s	128	4	2	1	1	10	7	12	2	23	9	2	0	3	0
Motorola G7	64	24	9	8	1	12	5	10	2	39	12	5	1	4	1
Vivo	32	12	7	6	2	9	4	13	2	52	9	4	1	2	1
AVERAGE		8	4	5	1	12	6	12	2	36	9	3	1	4	1
MAXIMUM		24	10	9	3	14	8	24	5	75	19	5	2	10	7
MINIMUM		2	1	1	0	9	4	2	1	23	4	0	0	1	0
2 1 1 0 9 4 2 1															
23 4 0 0 1 0															

Brief: :1 Total number of Entertainment apps, 1a Number of entertainment apps in use

2 Total number of News apps, 2a Number of news apps in use

3 Total number of Social Network apps, 3a Number of social network apps

4 Total number of ecommerce apps, 4a Number of ecommerce apps in use

5 Total number of Utility apps, 5a Number of utility apps in use

6 Total number of Education apps, 6a Number of education apps in use

7 Total number of Gaming apps, 7a Number of gaming apps in use

1. Entertainment – This area didn't appear very high on the number of apps that users had on their smartphone for each category. Though, it was observed for each user used at least one such app on a constant approach and this number uniformly improved as the quantity of entertainment apps.

2. News – This type is not prevalent among the digital natives as none of them had the total number of news apps on their phone more than a single digit, the maximum being 9. The number of news apps, which were frequently, is low-slung with many of the respondents having downloaded 0 to 1 apps that they turn to on a regular basis for news.

3. Social – This type is the most popular used among all users. All the respondents claimed to have social networking apps that were found to be around 10 to 15. On an average, about half of the apps installed on their phones were constantly used. The most used apps in this area were Facebook, Instagram, Gmail and WhatsApp

4. E-commerce – Eighty out of the 100 respondents had above 10 e-commerce apps on their mobile phones. However, only twenty of them used more than two of these e-commerce apps frequently. The commonly used apps in this category were Amazon and Flipkart but not everyone preferring the same app over the other.

5. Utility – This is the highest popular category among all respondents and most of them claimed to have minimum 20 plus utility apps on their phones. However, most of the users (90 out of the 100 interviewed) used around 10 of the utility apps installed on their phones frequently.

6. Educational – This is the least favorable app genre among all users. All the users claimed having lower than five educational apps. Also, the ones who installed 4 to 5 educational apps rarely use them and use a maximum of one educational app on a regular basis. The most popular app in this category was Unacademy.

7. Gaming – All respondents had as a minimum one gaming app on their phone. However, not all of them used these apps habitually. The largest number of apps that was found among all respondents was ten where the user used seven on a regular basis. Most of them asserted that they felt hooked to a specific game for some duration through which they only play that game frequently. After they felt bored playing it, they move to another app. This is perhaps the answer why most of the users played only one game on a regular basis.

4.1 Smartphones and Mobile Applications

Today's youth is continuously connected with the world through their smartphones. Many of the things that previously could have been approached only through desktops and laptops, can now be accessed at the fingertip by smartphone applications. All the users rarely ever use the messaging service any longer and favor- using apps such as WhatsApp or Facebook Messenger instead as they are entertaining to use, quicker, provide a lot of personalisation like emojis and also most significantly, free to use. Almost all the users regularly checked their mail inboxes via the Gmail app on their mobile phones. The users asserted that apps had made life simpler and swifter as all information was now accessible with them throughout and they could use it even while travelling.

4.2 Download Sources

It was found that users regard privacy and security as the utmost significant factor to decide location to install apps. As a result most of them are cautious of downloading apps through third party sources. They also reverberated the argument that they were certain that their reliable app stores at present have all the apps that they require on a day to day basis so they don't desire to go for any other third party source. For them trust is very important when considering downloading content and so, some of the users who claimed that they might think of installing apps from third party sources believed that they would do so however, only if those apps have been endorsed on a trusted platform.

4.3 Significance of an App

All users perceived that an app holds value and keeps them up to date with events and provide more information on any subject. Most of them asserted that an app must be something that provides the similar things if not more what a browser gives along with ease and all-time access. All of them approved that an app for them is something worthwhile and that resolves a specific problem or necessity that they face while making life smooth in the process. Each of them laid stress on the term 'utility' while describing meaning of an app.

4.4 Browser Vs Apps

Large number of the respondents supported the belief that although they enjoy using e-commerce apps for browsing but, prefer making the actual purchase through browser. Reasons for this were- using a browser allows them to search other product options side by side. Another aspect that one of the respondents shared about security during the payment on an e-commerce app. A few of them didn't mind using apps if they get good discounts. Most of them favored spending on apps when it came to known products and for repeat purchases. Barring e-commerce almost all of the users preferred using phone apps across all classifications such as news, entertainment and social.

4.5 Frequently Used Apps

The most favored used app category by all the respondents turned out to be social. Along with this, they also used one entertainment related app on a regularly and this number rose as the number of entertainment apps installed on their phone rose. The least preferred app categories were Education and News. The Gaming apps were most often found to be addictive in stages. Most of the users revealed they were carried away to playing a game very often and would keep playing it frequently until they get uninterested of it. Later on, they usually would install another gaming app and recur the cycle.

4.6 Sources of App Discovery

Most of the respondents stressed upon importance to endorsements by friends as well as other users. Expert reviews in blogs, TV shows like Tech Guru, websites like Tech Crunch and YouTube also hold relevance to a large extent. A lot of the users also shared that they often browsed on Google Play to glance recommended apps at the store. One of the respondents also shared that if she comes across aggregated lists of app recommendations on reliable websites by feebly or buzzfeed she checks them out and downloads them if she finds them exciting.

4.6 Factors Influencing App Installation

The collective notion that appeared from the interviews was that suggestions and proficient reviews held importance in both the exploration process as well as the downloading an app. The ratings and helpful customer reviews that an app had gained a mixed reaction with some people believing them while some not as they supposed that they might be paid for. One of the users even cited how he had installed an app which had more positive ratings and reviews than the total number of downloads. A number of respondents also said that they will be open to downloading and experiencing something new if the content is exclusive than all usual apps. Almost all the respondents however preferred downloading free apps over paid ones.

4.7 Features That Make an App Worthy

Discussing about the features that make an app worthy, all users shared that they considered apps that are quick and less interfering to be worthy applications. In addition to this, good content and an easy user interface were similar items that appeared in about everyone's list. Another vital aspect that most users appreciated in a good app was low usage of memory because of limited internal memory of their phones, they could not install large app. Few of them also expressed preference for free apps.

4.8 Problems Confronted On Apps

Crashes and hanging apps were the most encountered challenges experienced by all the respondents. Being asked for too much information and data was also a problem for the users. They felt that this stalled their privacy. They also realized that the installation process of these apps was such that one was required to fill the information and/or allow access to their personal files in order to be able to use the app.

4.9 Motives of buying the App

Maximum number of the users, initially stated they would not prefer purchasing apps admitted when questioned further that experiencing a trial time for an app is essential for them. On liking the app during that period, they would think through buying its full version then. In addition to this, a popular notion was that they were willing to pay for apps that were education and learning

based. This was unusual in this type of apps category because it was hardly existent in any of the user's phones and wasn't used very frequently. During these discussions, a lot of the users said that if an educational app, has interactive and exclusive content, they would not mind spending out some of their money for buying it. However, everybody continually emphasized on the point that they prefer the freemium model of apps and would mostly never pay directly for an app without experiencing it firsthand.

4.10 Factors of Significance for Paid App

Each respondent concentrated on the point that if the app does not offer him or her anything unique, they wouldn't plan purchasing it. So exclusivity and value adding for them were two exceptionally vital features that would make them consider a paid app, worth for money. All of them also desired the app to be cost-effective and to be able to substantiate its charges based on its features. Few of them opined that they were prepared to pay if the chargeable version of app guaranteed no interfering behaviour and great safety. Adding to this, better service and multiple device compatibility, sync features and data backup were desired.

4.11 Roadblocks in usage of apps

The frequent technological hindrances that disturb the respondents' perceived behavioral control and were observed from the undertaken study were the deficiency of reachable and trustworthy mobile technologies, broken up network access, limited phone memory and compatibility-associated issues. All these problems have adverse influence on the acceptance of mobile phone applications and affect the approval of these apps by decreasing the user's perceptions of behavioral control.

V. CONCLUSION

This research study demonstrates how enormously reliant youth are on their mobile phones and smartphone applications. The most favored app type among the people in age group of 21-30 years are Social, Utility and E-commerce. A few aspects on which their attitude and behaviour towards an app be influenced by appeared to be the app's speediness of operating, how interfering it was, it's content, app's user interface, ease of access, knack to modify, memory consumption and paying structure. The level of engrossment that a user has with an app was reliant on the category of app with the user being more inclined towards apps that were classified as social, utility and E-commerce.

Users preferred browsers to apps in matters pertaining purchase. However, when talking about re-purchase or pre-decided purchase and even for browsing to get the latest offers, e-commerce apps were favored more. For all other classifications, they were more at ease and favored apps more as they often used apps in free time. A number of features, influenced the inclination of these users to pay for an app, these include, app's exclusivity, the value addition it offers, how reasonably priced it is, its features and with the level of safety and privacy offered in the app.

The most frequent challenges encountered by the respondents while using mobile phone apps were abrupt crashing and hanging of app, too much interference in the way of too much information being required for app or repeated push notifications popping up on their screens often. Another problem was the large data and memory use in many apps. This was also a bit of a constraining for users when using or installing phone apps.

The gratification of an app user was cited as by many respondents to be concerning a number of reasons, the important ones, were the speed, privacy and security, the uniqueness and quality, ease of access, low interference, low memory occupied and most vitally how cost-effective the app was.

Digital Natives selected free apps over freemium and freemium over pay for apps. They prefer putting money in education related apps more than other types and are intending to buy an app only if it provides something different and likable content which is exclusive. They will not attempt to pay for an app if there are free alternatives available except it's quality is immensely higher and there is a high development provided by the charging app. While considering paying for an app, users would look for an app that is suitable to their pocket and justify the price charged through its features and content.

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