

Understanding Smartphone Apps Usage among Young Adults in India

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Abstract

The objective of this paper is to understand use of phone apps and attitude towards selection and use of apps among young adults. This study addresses the following questions: What is the usage behaviour of people when it comes to phone apps? What do consumers prefer more and why – phone apps or websites, across categories? What are the most common issues that users face while using phone apps? What constitutes consumer satisfaction when it comes to phone apps? What drives purchase intention for paid phone apps? How do app users define ‘value for money’ phone apps? Ten young adults in the age group of 21 to 30 years were interviewed through purposive and snowballing approach. Privacy and security of apps is important for this generation who are on their smartphone using apps all day.

Introduction

The number of Android apps in the market currently are 1.8 million (AppBrain) while there are more than 1.4 million apps in the iOS App store (Statista) and around 670k Windows apps available on Windows store (Microsoft). The fast growing market of phone apps, is the reason for innumerable brands increasingly tapping into this space to make profits and connect with consumers.

The overall worldwide mobile phone app downloads amounted to approximately 2.52 billion in 2009. This number is expected to reach 268.69 billion in 2017. Research has also shown that the earnings of all mobile app providers overall was almost 6.8 billion U.S. dollars in 2010 (Statista).

This research is focused on respondents who are either students or professionals in the age group of 21-30 years to determine their attitudes towards phone apps and usage. This helps understand their daily use of devices and smartphone apps for businesses to understand their consumers and create apps that will actually be useful to their patrons and become an integral part in their lives.

Literature Review

As smartphones work together along with a number of application softwares to make life convenient for every user, the demand for smartphones has significantly increased over time and with it the demand for phone apps. These apps which are software apps and run on smart phones and tablets are designed to perform specific activities such as to hire cars in an area, get directions to a place, play games or get health tips along with other information. These apps install within seconds and are generally free or have a nominal cost attached to them. Another advantage that they have is that they are always available to everyone and hence, their accessibility is extremely good. (Randolph, 2013) Phone apps can be traced back to the invention of the mobile phones. The first recognisable apps emerged from early personal digital assistants (PDA) which ran programmes like database, word processor, diary and spreadsheet. After this a number of developments lead to the creation of various kinds of apps ranging from the simple game Snake which first appeared on the Nokia 6110 phone to the more complex ones such as Facebook, Gmail and Skype.

This paper borrows theoretical framework of attitude to study "usage" of smartphone 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 a result of two variables which are the social influence perception by an individual on whether to perform or not to perform a particular behaviour and the attitude towards a behaviour. The social influence is considered to be a subjective norm.

This paper aims to understand the psychological process of consumers decision making related to phone apps. For this, the theory of planned behaviour has been adopted as the basic concept. This theory links behaviour and beliefs and explains that a person's decision to take action and the control that he or she believes he or she has over their behaviour directly influences his or her behaviour (Baek, 2013). In other words, it states that the attitude towards subjective norms, behaviour and perceived behavioural control mould a person's behaviour and behavioural intentions together.

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).

There are three types of smartphone apps:

1) Paid Applications – The users are charged a certain amount of fees for downloading and accessing such kind of applications and is paid through debit or credit card. These applications are not very popular amongst Indians as they usually prefer using free apps instead. (Business Standard, 2013).

2) Free applications – These applications are completely free and do not charge any fees for downloads or any kind of usage. Such applications are either completely not revenue

oriented or have other forms of generating revenue such as in-app advertising and sponsored content. These account for nearly 90 percent of total mobile app store downloads (Business Standard, 2013)

3) Freemium – The basic version of these apps is available for free while a fees is charged for the premium and more enhanced version. The main aim of the app developers of these kind of apps is to attract people into downloading their apps and get them to try these out so as to convert a fraction of these users into buying the premium paid version.

This research is more applied than fundamental. Therefore, the gaps on the applied aspects are addressed in this paper. Therefore, objective of this research is to understand how people use phone apps and what is the attitude towards selection and use of apps. This research aims to explore the consumers' intention to use and continual consumption intention. The aim is to identify the main value determinants for a particular user of phone apps (which might be factors such as nature of usage of apps or education related etc) and also which do they prefer more and why when it comes to phone apps and websites.

Research question 1: What is the usage behaviour of people when it comes to phone apps?

Research question 2: What do consumers prefer more and why – phone apps or websites, across categories? (especially e-commerce)

Research question 3: What are the most common issues that users face while using phone apps

Research question 4: What constitutes consumer satisfaction when it comes to phone apps?

Research question 5: What drives purchase intention for paid phone apps? How do app users define 'value for money' phone apps?

Method

This is an exploratory study to understand usage of smartphones among young adults in India. Each respondent in this study is a smartphone user and has multiple apps downloaded. The respondents are digital natives, in the age group of 21 to 30 years of age. The respondents were first approached to send the snapshot/s of their smartphone screen with all the apps. The screen shots of the respondents were used to tabulate number of apps and

categorise apps. The respondents were asked a few initial questions about use of apps across categories. Table 1: App categories, shows the categories of apps and their description.

Table 1: App categories

Categories	Description
Entertainment	This category of apps contains all the apps that are used for entertainment purposes such as watching movies or TV shows, listening to music, reading magazines or just for killing time by looking at viral images and funny jokes. Examples of well known entertainment phone apps are Talking Tom Cat, Meme Generator Free, Solo 2, Saavn, Shazam, Jango Radio, History TV18, Discovery News, Apple Music, 8tracks, Guvera Music, Flipboard and Magzter.
News	The apps that feature in the news category focus on day to day happenings of the world. Some examples of apps that are a part of this category are Times of India, News and Weather, The Hindu, Mint, afaqs, Feedly, inshorts, Financial Times, Business India, Stocks and comScore News.
Social networking	This category includes all interactive and communication tools that are always based on the internet and typically handle the capturing, storing and presentation of communication, usually in the written format but also in the visual such as video and images or audio format as well. Usually the format of these apps is a mix of a number of these formats such as YouTube is mostly a mix of video

	<p>and audio whereas WhatsApp is mostly text but also offers the option of sending audio, video as well as images via it's server. Some examples of apps that feature in this category are Facebook, Twitter, Pinterest, Quora, LinkedIn, YouTube and WhatsApp.</p>
ecommerce	<p>These apps vary in genre from fashion related e-commerce apps to booking tickets for travel or events such as concerts or stand up comedy shows. As these apps involve monetary transactions between the two involved parties, an extremely important feature for them is the security they offer while a payment is carried out. Some examples of these apps are bookmyshow, Flipkart, Amazon, Limeroad, Snapdeal, Myntra, Jabong, Foodpanda, Freecharge, Faasos and Paytm.</p>
Utility	<p>The utility category has been further divided into External and Internal sub categories with the apps that fall in the latter sub category directly helping out in the functioning of the phone whereas those in the former sub category not doing so.</p> <p>Some examples of phone apps that fall under this category and are external are Voice recorder, Chrome, Powerpoint, Microsoft Office, Samsung Gear, Google Maps, Pages Manager, QR & Barcode Scanner, Dropbox, Evernote and VLC.</p> <p>Examples of utility apps that are internal on the other hand are Advanced Task Killer, Battery optimiser, Inbuilt phone's themes, Power clean and Clock. Since the internal utility apps are usually</p>

	always inbuilt and are hardly ever downloaded, this category in our study will be ignored as they are more of a necessity than something of desire.
Educational	6. Apps that fall under this category teach or help in improving some skill or the other. These apps aid in the learning process and aim to teach something quantifiable or clearly definable. Examples of such apps are Duolingo, Lumosity, Elevate, Strategy Deck and Marketing @ Mobile MBA.
Gaming	7. A Gaming app is any app that provides some form of engagement and amusement to its users and is available to individuals either online or offline at the touch of a button. They are always interactive and can be social or solo, intellectual or action oriented or just plain entertainment. Examples of gaming apps are Subway Surfer, Candy Crush, Logo Quiz, Quiz Up and FIFA.

Respondents for this study were recruited based on the number of apps on their phones - atleast 30 to 40 apps and usage of apps. Snowball and Purposive sampling techniques were used for selection of respondents. To target respondents who had a fair idea about apps and understand their app usage behaviour, purposive sampling approach was initially used in order to identify two participants from the researcher's social network. After the completion of the two interviews, the respondents were asked to identify and suggest other potential respondents from within their social circle who met the set inclusion criteria. The sample was drawn from both students and working professionals for the interviews. The in-depth interviews were recorded after taking prior consent from the respondents. The responses of the participants were then transcribed and used for further analysis and to gauge detailed insights for the study. The questions of the interviews were designed in a way that helped

gauge the user’s attitude and daily app usage patterns in depth. The data analysis method employed for in depth interviews was thematic content analysis. Ten depth interviews were conducted from December 2015 to January 2016. See Table 2: Respondents' profile - demographic, smartphone and apps for the respondents demographic profile, type of smartphone used and number of apps on smartphone.

Table 2: Respondents' profile - demographic, smartphone and apps

SLN	Gender	Age	Occupation	Smartphone brand	OS	Internal Memory	Total apps on smartphone	No of apps in use
1	M	24	student	Samsung GalaxyS3	Android	16GB	105	35
2	M	22	student	HTC820S	Android	16GB	67	19
3	F	26	student	Samsung Galaxy Note3	Android	16GB	82	16
4	F	28	working	Samsung Galaxy Note4	Android	16GB	131	38
5	M	25	student	Samsung Galaxy S6 Edge	Android	64GB	61	17
6	F	25	student	iPhone5S	iOS	16GB	50	19
7	M	23	student	Nexus5	Android	16GB	48	19
8	F	23	working	iPhone5c	iOS	8GB	55	21
9	M	27	working	MotoG3	Android	16GB	102	31
10	F	25	working	Nexus5	Android	16GB	98	26

The average age of respondents was 25 years. Six of them were students and four of them working professionals. Eight of them used smartphones with android operating system and two of them had iPhones. There was an equal representation of girls and boys among the respondents. The respondents had an average of 80 apps downloaded on their smartphones. An average of 24 apps were used regularly.

Findings

Table 3: Total number of apps downloaded and apps in use across categories below shows the total number of apps downloaded versus the number of apps used by the respondents.

Table 3: Total number of apps downloaded and apps in use across categories

Phone brand	Internal Memory	1	1a	2	2a	3	3a	4	4a	5	5a	6	6a	7	7a
Samsung GalaxyS3	16GB	21	10	5	1	14	8	12	1	43	8	0	0	10	7
HTC820S	16GB	5	3	4	0	13	6	11	5	29	5	1	0	4	0
Samsung Galaxy Note3 Neo	16GB	3	1	9	1	14	6	24	2	25	4	4	2	3	0
Samsung Galaxy Note4	16GB	8	4	5	2	14	7	23	5	75	19	4	1	2	0
Samsung Galaxy S6 Edge	64GB	2	1	3	3	14	4	10	2	27	6	0	0	5	1
iPhone5S	16GB	3	1	4	2	10	5	2	1	23	9	5	1	3	0
Nexus5	16GB	2	1	2	0	11	6	5	1	24	10	3	0	1	1
iPhone5c	8GB	4	2	1	1	10	7	12	2	23	9	2	0	3	0
MotoG3	16GB	24	9	8	1	12	5	10	2	39	12	5	1	4	1
Nexus5	16GB	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

Legend:

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

Entertainment – This category doesn't feature very high on the number of apps that respondents had on their smartphone per category. However, it was observed that each respondent used atleast one such app on a regular basis and this number proportionately increased as the number of entertainment apps.

2. **News** – This category is not popular amongst the youth aged 21-30 years as no respondent had the total number of news apps on their phone above a single digit, the highest being 9. The number of news apps that were used regularly is also low with most of the respondents having 0 to 1 apps that they turn to on a regular basis for news.

3. **Social** – This category is the most frequently used among all respondents. All the 10 respondents claimed to have social networking apps that were in the range of around 10 to 15. On an average, around half of the apps that were present on their phones were also used on a regular basis.

The most commonly used apps in this category were Facebook, Gmail and WhatsApp.

4. **E-commerce** – Eight out of the 10 respondents had 10 plus e-commerce apps on their phones. However, only two of them used more than two of these e-commerce apps regularly. There seemed to be no commonly used app in this category with almost everyone having one of the popular apps such as Amazon and Flipkart but not everyone preferring the same app over the other.

5. **Utility** – This is the most popular category among all respondents and every respondent

claimed to have at least 20 plus utility apps on their phones. However, most of the respondents (9 out of the 10 interviewed) used around 10 of the utility apps present on their phones regularly.

6. **Educational** – This is the most unpopular app category among all respondents. All the respondents reported having less than 5 educational apps, with some of them having none. Even the ones who did report to having 4 to 5 educational apps hardly use them and use a maximum of one educational app regularly. The most popular app in this category was Duolingo, which is a language learning app.

7. **Gaming** – All respondents had at least one gaming app on their phone. However, not all of them used these apps regularly. The maximum number of apps that was found among all respondents was ten where the particular respondent used seven of those on a regular basis. However, every other respondent had less than or equal to 5 gaming apps on their phones. Most of them claimed that they get addicted to a particular game for a certain duration during which they only play that game regularly. After they get bored playing it, they stop using it and install another app and begin using it instead. This is probably the reason why most of the respondents either played only one game or none regularly.

Smartphones and Mobile Applications

Today's youth is constantly connected with the outside world via their smartphones. A lot of things that could have been previously accessed only by desktops and laptops, can now be accessed at the touch of a button via smartphone applications. All the respondents hardly ever use the messaging service anymore and say they prefer using apps such as WhatsApp, Google Hangouts and Facebook Messenger instead as they are more fun to use, faster, offer a lot of personalisation such as emoticons and also most importantly, free to use. Almost all the respondents actively checked their Gmail inboxes via the Gmail app on their phones on a regular basis. The respondents claimed that apps had made life easier and faster as all information was now available with them 24x7 and they could access it even when they were on the go.

App Download Sources

It was found that all of the respondents consider privacy and security an extremely important factors in deciding where to download their apps from. This is why most of them are wary of downloading apps from third party sources. A number of them also echoed the sentiment

that they believe their trusted app stores already have all the apps that they need on a day to day basis so they don't feel the need to go for any other third party source. Trust to them is very important when it comes to downloading any kind of content and hence, some of the respondents who mentioned that they might consider downloading apps from third party sources said that they would do so however, only if the apps have been recommended on a trusted website such as Cnet or Techcrunch.

Value of an App

All respondents believed that an app is something that is of value and keeps them updated with things and get more information on any topic. Many of them believed that an app should be something that offers the same things if not more that a browser does in addition to convenience and any-time access. All of them agreed that an app for them is something useful and that solves a particular problem or need that they are facing while making life easy in the process. Each of the respondents stressed on the term 'utility' while describing what an app means to them.

Browser or Apps?

Most of the respondents echoed the sentiment that although they like using e-commerce apps for browsing and going through new deals offered, they however, prefer using browsers when making the actual purchase. This is because using a browser lets them explore other product options at the same time and see user reviews and ratings at the same instant. Another factor that one of the respondents claimed to be worried about was how secure the payment was while she was purchasing products via an e-commerce app. A few of the respondents, however, said they don't mind using apps if they get good discounts and deals via them but they would prefer a website otherwise. Most of them preferred using apps when it came to products they already had a lot of information about and for repeat purchases. Apart from e-commerce almost all of the respondents preferred using phone apps across all categories such as news, entertainment and social.

Regularly Used Apps

The most commonly used app category which all the respondents claimed to use extensively on a daily basis turned out to be social. Apart from this, they also used atleast one entertainment related app on a regular basis and this number increased as the number of

entertainment apps present on their phone increased. The least used app categories were Educational and News. The Gaming apps were mostly found to be addictive in phases. Most of the respondents claimed they got addicted to playing a particular game often and would keep playing it regularly until they get bored of it completely. After which, they usually would download another gaming app and repeat the cycle.

App Discovery Sources

Almost all the respondents claimed that they give a lot of importance to recommendations by friends as well as other users. Expert reviews in blogs, TV shows like Tech Guru, websites like Tech Crunch and YouTube also mattered to most to a large extent. A lot of the respondents said they often browse through Google Play just to see which apps are being recommended at the store apart from this, if they face a particular requirement and need an app for a specific task, they search online for suggestions. One of the respondents also said that when she sometimes comes across aggregated lists of app suggestions on trustworthy websites by feebly or buzzfeed while browsing social networking sites, she checks them out and installs them if she finds them interesting.

Factors Impacting App Installation

The common theme that emerged from the interviews of all respondents was that recommendations and expert reviews mattered in both the discovery process as well as the installation of an app. The ratings and positive user reviews that an app had received a mixed response with some people trusting them while some not as they believed that they might be bought. One of the respondents even mentioned how he had downloaded an app a few months ago which had more positive ratings and reviews than the total number of downloads. A number of respondents also said that if the content is unique and different than all usual apps they will be open to installing it and experiencing something new. Almost all the respondents however stressed on the fact that they prefer installing free apps over paid ones.

Qualities That Make an App Good

When asked about the qualities that make an app good, all respondents said that they considered apps that are fast and less intrusive to be great applications. Apart from this, great content and an easy to use interface are some things that featured in almost everyone's

list. A respondent also said he really appreciates if an option to switch off push notifications is available in apps so the app doesn't keep sending him notifications all throughout the day. Another important factor that most respondents believed made an app good was low memory usage as the internal memory of their phones was limited and hence, they could not opt for too heavy an app. One of the respondents also said that for an app to be good they would prefer it to be free.

Common Issues Faced On Apps

Crashes and hanging apps were the most common issues faced by all the respondents and they had faced these across apps sometime or the other. However, one interesting issue that came across was the issue of being asked too much information and data. Respondents felt that this hindered their privacy and they didn't like that. One respondent remembered a time when he bought a paid app and downloaded it but once installed, it turned out that the app was not compatible with his device which left him frustrated. He said he would have preferred if he had been informed that the app wasn't compatible before he made the payment itself.

App Purchase Intentions

Most of the respondents, although initially claimed they would not prefer buying paid apps confessed when probed further that having a trial period for an app is important to them. If they like the app in that duration, they would consider purchasing its full version then. Also, a common trend that was clearly visible among all respondents was that they were open to paying for apps that were education and learning related. This is particularly surprising as this category is the one which was hardly present in any of the respondent's phones and wasn't used very regularly. On probing further, a lot of the respondents said that the apps that are currently found on education don't seem to teach anything unique or new that can't be found online for free as well. This is why they prefer using browsers for such purposes instead. If an educational app, has interactive and unique content which is not available anywhere else, they would probably not mind shelling out some of their money for purchasing it. However, everyone constantly stressed on the fact that they supported the freemium model and would mostly never pay directly for an app without trying it out first. One respondent though out of the ten interviewed believed that every app that is available for a price now will later be available for free in the future at some point or the other and so

doesn't see himself paying for an app atleast in the near future.

Features of a Value for Money App

Every respondent focused on the fact that if the app does not provide them anything unique, they wouldn't even consider purchasing it. So uniqueness and value addition for them were two extremely important factors that would make them call a paid app, value for money. All of them also wanted the app to be economical and to be able to justify its price via its features. One of the respondents said he was willing to pay some money if the paid version of an app ensured no intrusive behaviour and high security. He also preferred the app providing him better service and multiple device compatibility and sync feature so he doesn't have to worry about losing his app data if the app or one of his devices ever stops working, making recovery extremely simple.

App Usage Barriers

The most common technological barriers that affect the user's perceived behavioural control and could be observed from this study were the lack of accessible and reliable and mobile technologies, interrupted network access (because of the service provided by the network provider), availability of limited phone memory and compatibility-related problems. All these issues have a negative influence on the adoption of phone applications and affect the acceptance of these apps by reducing the people's perceptions of behavioural control.

Conclusions

To conclude, the results address the research questions as below mentioned:

Research question 1: This study proves how extremely dependent today's youth are on their smartphones and mobile applications. The most popular app categories among the individuals in age group of 21-30 years are Social, Utility and E-commerce. A few facets on which their attitude and behaviour towards an app depend emerged to be the app's speed of functioning, how intrusive it was, it's content, app's user interface, ease of use, ability to customise, Memory usage and Pricing structure. The degree of involvement that the individual has with an app was dependent on the type of app with the user being more involved with apps that fell into categories such as social, utility and E-commerce.

Research question 2: Individuals in the age group of 21-30 years preferred browsers to

apps when it came to matters involving purchase. However, in cases of re-purchase or when a certain product purchase was already pre-decided and even just for browsing to see the latest deals and offers, e-commerce apps were preferred more. For all other categories, they were more comfortable and preferred apps more as they often used other categories when bored and as a tool to pass time. A number of factors however, affected the willingness of this group to purchase an app, these came out to be the app's uniqueness, the value addition it provides, how economical it is, its features along with the level of security and privacy provided within the app.

Research question 3: The most common issues faced by the users when it came to using phone apps were frequent crashes, too much intrusion in the form of too much information being asked for or too many push notifications popping up on their phones regularly. Another issue that was spoken about by everyone was the high data and memory usage that many apps resulted in. This was also a little bit of a deterrent for many when using or deciding on installing phone apps.

Research question 4: The satisfaction of an app user was quoted as by many to be dependent on a number of factors, the main ones however, were the speed of the app, the privacy and security it offered, the quality and uniqueness of the content, ease of use of the app's interface, low intrusion, low memory usage and most importantly how economical the app was.

Research question 5: Individuals of this age group were found to prefer free apps over freemium and freemium over paid ones. They prefer buying education and learning related apps more than apps of any other category and are willing to purchase an app only if it offers something unique and offers interesting and engaging content which is not available anywhere else, especially for free. They will not consider buying an app if there are free substitutes of it available in the market unless its quality is vastly superior and there is an immense amount of value addition offered by the paid app. Even when they do consider buying an app, they will still look for an app that is economical and they feel is affordable and its features and content justify the price being demanded.

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