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Investigating Factors Influencing Consumer Adoption of Mobile Apps in Ncr: A Qualitative Study

[1*]Yedukondala Mahendrababu,[2]Prasanth Babu Vemula,[3]Sk Khairunbi,[4]Yedukondala Mahendrababu

ABSTRACT

The recent years have seen an exponential rise in the mobile application space. Organizations strive to be present in this space for interacting with the customer. In this light, it is important to study the current usage of mobile applications and factors which affect their adoption across age groups. This research is a qualitative study, which investigates the pattern of usage, the user friendliness, the liked and disliked features of mobile apps and the beliefs associated with them. Mobile applications being a fairly recent technological advancement, it has been important to study their adoption in the light of the diffusion of innovation and investigate the effect of social influence on decisions to use mobile apps. The findings of this study are based on a total of 29 responses (19 through semi-structured interviews and 10 through focus group discussion) in National Capital Region of India (NCR). The responses were analyzed using content analysis. This study reveals differences in patterns of usage and beliefs among Gen X and Gen Y users. It was found that Gen Y users used mobile apps much more extensively than Gen X users. Though both categories of users believed that usage of mobile apps made life easier, Gen X users had negative beliefs about mobile apps. The findings also reveal the presence of the trait of innovativeness and uniqueness among Gen Y users, which leads to adoption of mobile applications.

KEYWORDS

Qualitative research, mobile applications, factors for adoption, Gen X, Gen Y, social influence, content analysis, innovativeness, uniqueness, competitiveness

INTRODUCTION

With the increase in the use of smartphones, the usage of mobile applications, hereafter referred to as an 'app', has also increased exponentially. Nielsen (2015) recorded that the use of e-commerce mobile apps in India jumped up to 54 per cent from 21 per cent the previous year.

There are mobile apps available for many purposes—for shopping, e-wallets, music, games, entertainment, navigation; for information updates and for communication. While a few of them are paid, most of them are available for free from the App Store for the iOS or the Google Play store for the android platform. In India, it was found that 41 per cent of the mobile users were active on social media, with an average of 2 hours and 57 minutes in a day being spent on it. Also, the social media sites have more people in the age group 35–65 and more women online (KPMG, 2015, April).

The current study aims at understanding the drivers and inhibitors for adoption of mobile apps and the concerns faced by consumers in their adoption, using qualitative research. The outcomes would help in preparing an instrument for the adoption of mobile apps, which has not been attempted in the Indian context. This study also significantly contributes towards theories, as existing theories were found to be too simplistic or inadequate to fully explain the factors for adoption of mobile apps.

This article is organized as follows—The first section introduces the topic. The second section is the review of literature outlining the existing, prominent theoretical models that have been used to explain adoption of technology. The third, fourth and fifth sections deal with research objectives, rationale of the study and methodology, respectively. A sample of the responses on the various aspects of mobile apps has been transcribed and analyzed in the sixth section and conclusions have been drawn in the seventh section. The eighth and ninth sections deal with the managerial implications and limitations of the current study with suggestions for future areas of research.

Corresponding Author: Yedukondala Mahendrababu
[1,2,3,4]Associate Professor
Department of Basic Science And Humanities
G V R & S College of Engineering & Technology,Guntur,AP

Review of Literature

The adoption or non-adoption of mobile apps, and the factors thereof, can be better understood in the light of theoretical models proposed in earlier researches. The technology acceptance model (TAM) proposed by Davis (1989) to explain intention to use technology has two key antecedents—perceived usefulness and perceived ease of use. Perceived ease of use had a significant impact on perceived usefulness (Aboelmaged & Gebba, 2013) and emerged as a more important predictor variable than perceived usefulness in a study conducted to measure customer satisfaction towards Internet banking (George & Kumar, 2013).

An extensive study of literature revealed that the Unified Theory of Acceptance and use of Technology (UTAUT) proposed by Venkatesh, Morris, Davis and Davis (2003) was predominantly used to explain adoption of technology by individuals. This model was a synthesis of eight pre-existing theoretical models of technology adoption, including the TAM (Davis, 1989).

The UTAUT showed that performance expectancy, effort expectancy, social influence and facilitating conditions were significant determinants of behavioural intention and user behaviour. It was also found that gender, age, experience and voluntariness of use moderated these influences. It was seen that the effect of performance expectancy on younger people and males was higher for intention to use and the effect of effort expectancy was seen more in the case of older women (Venkatesh et al., 2003).

A principal construct in the UTAUT is the user's intention to perform a behaviour. Intention represents the user's willingness to perform the action and represents the motivational factors that drive an individual to perform that behaviour. It is also indicative of the level of effort that an individual is willing to put in performing that behaviour.

Technology usage was determined by subjective norm or social influence and perceived behavioural control, which represents the ability to use the system independently. It was found that social influence plays an important role only in the early stages of adoption (Morris & Venkatesh, 2000; Venkatesh et al., 2003). The effect of social influence is moderated by age and gender, with older working people and females more affected by social influence, leading to technology adoption (Morris & Venkatesh, 2000; Venkatesh, Morris, & Ackerman, 2000). Social influence was found to be the most important factor affecting intention to adopt mobile banking in Taiwan (Yu, 2012). Existing literature also shows that women prefer using hedonic apps, while men prefer utilitarian apps (Sohn, Schulte, & Seegebarth, 2014).

Social influence not only includes the 'physical' social circle of family, friends and colleagues but also the 'virtual' social circle that an individual engages with. Research on paid app use by Wu, Kang, and Yang (2015) differentiated social influence as mass influence and peer influence to study in detail the effects of these components on behaviour. Mass influence includes 'mass media reports, expert opinions and other non-personal information' (Bhattacharjee, 2000). Peer influence has been found to have a direct effect on acceptance and use of new technologies (Kim, Yoon, & Han, 2016). The study by Wu et al. (2015) concluded that mass influence had no significant relationship with attitude, whereas peer influence had a significant impact on attitude.

Personal innovativeness and security risk are also important determinants of technology adoption. Besides performance expectancy, effort expectancy and social influence, personal innovativeness also plays an important role in technology adoption (Lu, Yao, & Yu, 2005). Security risk is defined as the possibility of an agent to take advantage of the weakness in the security system (Gangwar & Date, 2016) and it has been found to have a significant and negative impact on mobile wallet intention in a study on adoption of Indian mobile wallets (Madan & Yadav, 2016).

Objectives

Earlier researches have emphasized the importance of demographics and sociocultural factors influencing purchase and consumption (Vohra, 2016). This study will explore whether the intensity and frequency of usage of mobile apps will be dependent on the benefits derived from them and act as an intrinsic motivation factor. The current study aims to look into the sources of social influence and the role of personal innovativeness, which drive the user to download the mobile app and use it. It attempts to understand the usage patterns of the mobile apps and study the drivers and inhibitors, which affect their adoption. To achieve this, there is a need to develop a scale for which qualitative research is the first step for identifying the items. The present work is a step in this direction.

Rationale of the Study

Literature review has shown that research on mobile apps in India is scarce when compared to that in developed countries, and hence there is a pressing need to develop a scale for the Indian context. The reasons for creating a new scale relevant to the Indian context are specifically important due to the differences between Western culture and Indian culture as also differences in the level of technological development, mobile penetration and the facilitating conditions for mobile app usage.

It also needs to be noted that some of the early studies, which have tested the empirical evidence of the adoption of technology with respect to UTAUT, have been done in organizational settings, where there is a need for the individual to conform to organizational policies with very little scope for individual volition. In the case of mobile app adoption, the voluntariness of the individual in exercising his choice becomes operational. The decision to use or not use the technology is made at the individual level after evaluation of the advantages of its use and the associated security risks.

Methodology

This study is based on exploratory qualitative approach, which provides insights to the researcher when there is limited knowledge about the topic (Chawla & Sondhi, 2016). The techniques used for qualitative research were in-depth interviews and focus group discussions (FGD). In-depth interviews with respondents were conducted in the comfort of their homes or at their workplace to ensure that the interviewees could respond freely without being judged by others. As the focus of the investigation was clear and the objective was to uncover feelings of the respondents, a semi-structured approach was followed wherein the questions were asked in no particular order and more questions were added to seek clarification and deeper insights (Ramadan, 2017; Taylor & Bogdan, 1984).

A sample of 19 respondents was chosen through convenience sampling for the semi-structured interviews, which were conducted with the help of the guidelines for qualitative research (Appendix A) that were ratified through expert opinion. Twelve of them were Gen Y users and seven were Gen X users. Gen X consumers have been categorized as those above 40 years of age. Gen Y users are those born in the period 1977–1994 and would be between 22 and 39 years of age (Hawkins & Mothersbaugh, 2010). Eleven males and eight females were interviewed to rule out gender bias. The interviewees have been drawn from various occupational backgrounds including students, corporate sector, educators, entrepreneurs and homemakers.

FGD is a technique that is very effective in exploring perspectives because the discussion is conducted in a homogenous environment with the individuals not only responding to the queries of the moderator but also responding to other group members. This makes focus groups more than just the sum of individual interviews (Vogt, King, & King, 2004).

For the FGD, 10 students in the age group 22–39 (Gen Y) were selected. Eight were male and two female. During semi-structured interviews, it was found that among the Gen X group, the responses had reached a saturation point and no new responses were being discovered, whereas new perspectives were being discovered among the Gen Y group. This was the rationale for choosing the Gen Y group for the FGD.

The questions in the framework were primarily pertaining to the constructs of UTAUT— performance expectancy, effort expectancy and social influence. In addition, the respondents were asked questions about themselves and also pertaining to liked and disliked features, feelings and beliefs about mobile apps.

The responses were audio-taped after obtaining permission from the respondents and transcribed later. Content Analysis was used to analyze the interviews that were transcribed. The categorization or classification of data into different categories is called ‘Content Analysis’ (Sharma & Pascricha, 2017). In the present research, since the knowledge about the use of mobile apps is limited, the inductive approach of content analysis has been used (Elo & Kyngäs, 2008) and codes or categories are drawn from the data (Cavanagh, 1997; Kondracki, Wellman, & Amundson, 2002; Stottinger & Penz, 2015).

Analysis

The interviews were conducted according to the guidelines attached in Appendix A, though the questions were not asked particularly in that order. The outcomes are discussed under the following heads.

Usage Pattern

The interviewees were asked about which apps were downloaded on their phone and which ones they used. To check the intensity of usage, they were asked about how many apps were used on a regular basis and approximately how much time they spent on mobile apps in a day. The responses have been summarized in Table 1 to be able to draw out inferences about any emerging patterns across age or gender. A male aged 28 (Gen Y) said:

A Gen X female aged 48 said: Very limited. Skype, WhatsApp, FaceTime, Facebook… That’s about it. A Gen X male aged 49 replied: Very few. WhatsApp, FaceTime, Safari, Uber—though I don’t use that much. Facebook I used to have, now I don’t. Google Maps (I use). A Gen Y male aged 22 answered: Fitness Apps, Navigation apps, Coupon apps for restaurant— BookMyShow, Flipkart, Snapdeal, Practo, Travelapp for Delhi Metro. For fitness App—I use Gold Gym app. Facebook, WhatsApp, Hike Messenger, For e-banking—FreeCharge. A Gen Y female aged 35 stated:

A Gen Y female aged 22 said:

When asked about the number of apps regularly used in a day and the number of hours spent on it, a Gen Y male aged 28 replied: About seven-eight; approx. 5 hours in a day. A Gen X female aged 48 said: About three; about one–two hours in a day. Respondents of the in-depth interviews and FGD used various branded apps. For easier analysis, these have been clubbed and reported as items in Table 1.

Table 1. Usage Pattern of Mobile Apps

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Mobile wallets/banking	2		7	2	11
2	Booking cabs/tickets	1		9	5	15
3	Entertainment/games	2	1	9	6	18
4	Social networking	5	10	22*	13*	50*
5	Professional networking			8	1	9
6	Navigation	3		2	1	6
7	Shopping			16*	5*	21*
8	News/profession-related information	2		4	3	8
9	Food/restaurant			6	2	8
10	Security/music information/health and wellness/educational			5	3	8

It was observed that, in general, the usage of mobile apps in a day was between one and two hours for Gen X and seven to eight hours for Gen Y users. As can be seen from the replies, there is a clear demarcation between the two age groups, with the usage being heavy among the Gen Y compared to the Gen X users, in terms of number of apps used and the total time spent on the apps during the day. Gen X users primarily use mobile apps for social connectivity (WhatsApp, Facebook, Skype). For the Gen Y consumers, the usage is much more extensive. They use mobile apps for professional networking, e-commerce apps (Myntra, Snapdeal, Amazon), Booking apps (BookMyShow, MakeMyTrip), mobile wallets (Paytm), news-related apps (ET, Financial Express), profession-related apps (NetDania, Bloomberg), Music apps (Shazam), Security apps (Prolab), Health and Wellness apps (GoldGym, Relaxation) and Medical apps (Practo). However, one thing common in both the age groups was that they primarily used free apps and did not opt for the apps in the paid category.

Purpose of Use The performance expectancy sums up the benefits accrued to the individual and represents the motivation to use mobile apps. Respondents were questioned on why they used mobile apps and multiple reasons were obtained. Some of the replies have been reported below:

A Gen Y male aged 28 said: I found it, if I don't use this, I cannot be hmm…In the present scenario, you should know the technology. Just to letting myself involve in the technology, I am using it. A female aged 48 (Gen X) replied:

A Gen Y male aged 36 stated: The mobile is like a one-stop-shop. I find everything there. For mails, shopping, banking. It is very handy and comfortable to use. I also get good deals. A Gen X male aged 54 answered: For convenience. Google Maps is convenient. WhatsApp is primarily to stay in touch and also for entertainment…. and to gain knowledge. Mobile I can do it on the move. So, it improves my efficiency….it saves time.

The results are tabulated in Table 2.

The reasons why the interviewees used the mobile apps included convenience, to be connected, to be updated with technology, to be abreast with latest fashion trends and for entertainment. Some of the items where frequencies were below five have not been reported in Table 2. These items include usage of apps for health and fitness and for communicating with large teams. Some respondents felt that in the present day, there is shortage of time so using mobile apps gives them more free time with family. One respondent said that she read books on mobile apps and so they served like a virtual collection of reading material, thus helping in space saving.

Table 2. Purpose of Use

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Convenience	5	2	3	3	13
2	To be technologically updated	3	1	10	3	17
3	To be updated on information/for keeping abreast of everything	4	0	12	4	16
4	To be socially connected/keeps in touch	6	4	11	2	23
5	Professionally connected/updated	2	0	8	2	10
6	For shopping	0	0	10	5	15
7	For booking	0	0	9	6	15
8	For entertainment/music, games and reading	4	1	13	5	23
9	Reduces effort/is efficient/improves productivity	2	0	3	2	7
10	Saves time/more free time/speeds up life/saves time from getting stuck in traffic jams	2	1	12	7	21
11	Saves money/good deals/for cashback	1	0	8	2	11
12	Makes life easy	2	1	11	3	17

Table 3. Advantages of Mobile Applications over Web Applications

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	All the time access/24*7	2	0	8	2	12
2	While travelling/on the move	3	0	2	1	5
3	Handy/compact/carry all the time/easy to carry	0	2	4	1	6
4	Easy/simple operation/user friendly	0	1	1	3	5
5	Laptop—considerable loss of time	0	0	4	1	5

Gen X users had mixed reactions. On the one hand, they realized the convenience and time-saving features of mobile apps, while on the other there was a feeling that mobile apps drew their attention and kept them from enjoying other aspects of life, like nature or companionship. They detested the overuse of mobile apps and were conscious to keep their interaction with their mobile apps minimal.

Advantages of Mobile Applications

over Web Applications The respondents were asked for their preference of usage through mobile apps vis-à-vis web sites. To elaborate, they were questioned about the usage of the apps on the phone rather than on a laptop or a computer.

A male aged 28 (Gen Y) said: First of all, it is compact in size. Easy operation, you can keep it while travelling anywhere and it's convenient.

A Gen Y male aged 22 replied: The cellphone is with us all the time.

A Gen Y female aged 35 answered: Again convenience. For a laptop, you have to go somewhere and switch it on. This is available to you all the time 24*7.

A Gen X male aged 54 said: On the move. It is not necessary that I am in front of my laptop all the time. My job takes me to meetings and so I can access these anywhere I want.

The results are reported in Table 3.

The common reply among Gen X and Gen Y was that the mobile was handy and was with them all the time. On the other hand, to use a similar web application on the laptop, one would have to switch it on, wait for the internet connection, load the website and then use the application, which would lead to a considerable loss of time.

User Friendliness

As stated earlier, the difficulty in using a technology can act as a limiting factor for its adoption. To capture this information, respondents were queried on ease of navigation within the app and whether the respondents had required any help on how to use the app. A female aged 49 (Gen X) said: Not really. It was just hit and trial. These are such simple apps. A Gen Y male aged 22 answered: Yes. If the graphics are new or have been changing, it is difficult in the starting days. A Gen Y female aged 35 replied: Initially it was difficult for me. But slowly and slowly, with friends, family helping you out, I have also got myself updated on these apps. The results are exhibited in Table 4.

Table 4. User Friendliness

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Hit and trial	2	1	10	3	16
2	Simple to use	4	3	7	5	19
3	Self-learning	3	2	15	5	25
4	Difficult in the starting days	2	2	3	3	10

The commonality observed across both the age groups was that navigation within the mobile apps was easy and that they learnt it themselves through hit and trial, with little help from family and friends, if need be. Thus, it was inferred that irrespective of the background of education, the consumers felt it was easy to use mobile apps. Hence, it can be concluded that the Gen X and Gen Y members perceived that mobile apps were easy to use.

During the FGD, the Gen Y members were asked if they had at any point of time assisted their older family members in downloading or showing them how to use an app. To this query, all 10 members replied in the affirmative. From this, it

can be inferred that to a large extent, these younger members are the change agents who help in the diffusion of innovation among the Gen X users.

Social Influence

The aspect of social influence encompassed two aspects—the sources that created awareness about the presence of apps and the sources whom the respondents checked with before downloading an app. Regarding the question on who created the awareness of the presence of an app, some of the replies have been documented below:

A female aged 48 (Gen X) said: I suppose, my son.
A Gen X male aged 58 replied: I guess my friends, my son and daughter.
A female aged 35(Gen Y) said: Through newspaper and TV ads.

A Gen Y male aged 22 said: By myself. As I joined the job… the job was basically for app makers, by them I got to know. Different people asked me about the app, so I coped up with that. Most of the people acknowledged that they started using apps on their own or due to the influence of their peer group.

Some Gen X users admitted that they came to know about the apps from their children. Some Gen Y users admitted that they learnt about the presence of an app through TV or newspaper advertisements.

The query on whom they consulted before downloading an app got varied replies, some of which have been quoted below:

A Gen Y male aged 28 said: I go through the Review first. Review itself gives you the satisfaction whether to download, not to download.

A male aged 49 (Gen X) answered: I consult my friends. Normally I don't download any app, unless someone tells me that it is useful.

Table 5. Social Influence

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	By myself/on my own	0	0	4	2	5
2	Friends/colleagues	4	3	12	4	23
3	Children/family	3	2	0	0	5
4	Got to know through advertisements—TV, newspaper	0	0	3	2	5
5	Went through the reviews and ratings before downloading	0	0	16	3	19

A Gen Y female aged 22 said: Friends….and I read the reviews before downloading. A Gen Y male aged 22 replied: I check the ratings and also check similar apps which are available over there.

The results are summarized in Table 5

As is observable, Gen X members downloaded an app on their phone after recommendation from their peer group. Gen Y users however checked the reviews and the ratings of the app in the App Store before downloading it on their smartphones. During the FGD, it further emerged that Gen Y customers proactively browse the App stores to check for new apps that are available to handle tasks.

Hence, it can be summarized that mass influence along with peer influence are important determinants for mobile app adoption for the Gen Y customers; whereas for the Gen X users, only peer influence acts as an important factor for adoption.

Liked and Disliked Features of Mobile Apps

The respondents were asked to feel free to talk about any features that they liked or disliked about mobile apps. Since all the interviewees had used mobile apps previously, a few of them mentioned some features which they liked and some features which irked them. Regarding features that they liked in mobile apps,

A female aged 35 (Gen Y) replied: Advertisements which appear showing discounts or promotions.

A Gen Y male, aged 28, replied: The Archive or History feature.

A Gen X female, aged 48, said:

I suppose it's nice to have a navigation tool, it's nice to have a tool to do a voice call, it's nice to have an app to order a cab, for me these are convenience apps. For the social networking apps that I use, it was fine when one didn't have them, one would call one's friends—that was better. Now, I suppose it is better at the end of the day, if there are 10 different messages from 10 different sources you just feel kind of, you have your own place in this world.

A male aged 49 (Gen X) said:

WhatsApp is convenient and very useful for keeping teams, groups together. Also, to stay in touch with friends. FaceTime is great to talk to family and friends as well.

A Gen Y male aged 22 said:

accurate data and e-banking facility. For e-banking I use FreeCharge—it helps me pay my phone bills, landline, electricity bills, wi-fi bills.

A female aged 35 (Gen Y) stated:

I think simplicity is the most important thing in these apps. Because as long as everything is very, very simple, it takes you through simple steps, you feed in simple things and you get simple answers, that is the key. The simpler the app, the more user friendly it is.

When the respondents were asked about what features they disliked. A male aged 28 (Gen Y) replied: Advertisements… While using it, if you get the advertisement, it is irritating.

A Gen Y male aged 22 answered: Upgradation. They require upgradation from time to time.

A male aged (Gen Y) said: Sometimes the payment get stuck… and it takes one week for the money to come back. The results are reported in Table 6. During the FGD, a few of the Gen Y respondents replied that advertisements that appear during the usage of the app are annoying. A few of the Gen Y respondents mentioned that in case of unsuccessful payments, the refund payments took a long time.

Beliefs About Mobile Apps

The respondents were asked about how they felt while using the mobile apps. They were prompted to answer if they felt empowered in using the apps, if they felt technologically upgraded or more productive. Through this query, it was attempted to draw out the positive and negative beliefs that the interviewees had regarding mobile apps. A male aged 28 (Gen Y) said: It saves lot of time, using it is giving me a feel of technology…. I feel updated. A female aged 48 (Gen X) said:

A male aged 49 (Gen X) said: We probably waste more time (with apps). It's also productive and also being able to communicate to a group of people together—its very, very convenient.

A Gen Y male, aged 22, replied: I think they are valuable as I am also looking at developing my own app. As it is trendy a lot… so it inspires me a lot.

A Gen Y female, aged 35, said:

Table 6. Liked and Disliked Features

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Simplicity, accurate data**	0	0	4	5	6
2	Easy navigation**	0	0	8	2	10
1	Advertisements***	0	0	7	1	8
2	Delay in refund after unsuccessful payment***	0	0	5	0	5

I also use this app called Prolab. This is an app which is actually …. I have a small baby and anywhere in the world I am … I have cameras installed in my baby's room… anywhere in the world I travel I can use this app and see my baby. …. As a mother, I feel very, very comfortable… very, very reassuring, comforting as a mother. Then Google Maps, I feel women have the most horrible sense of direction, I feel very, very empowered when I use the Google Maps. With YouTube any latest song, anything I want to do, I am with YouTube. Then when I am handling clients, I am on NetDania….. I feel again I am updated. With Shazam, I know which is the latest song, I am part of the…. I am keeping up with the Joneses…. Feel part of the group, when you go out, everybody is talking about the latest apps, what's happening, so you don't feel left out.

A female aged 44 (Gen X) commented:

It is both ways. You save a lot of time, but on the other hand… sometimes you feel, you feel connected as well as disconnected. You know what's happening around… disconnected because people have stopped calling, they are only messaging and you feel that oh! We haven't spoken to that person, not realizing that we are messaging everyday but haven't heard the voice.

A male aged 36 (Gen Y) said:

Shopping is exciting because of the offers, good deals. I feel technologically upgraded in using the apps. I am also competing with friends to first discover an app or to download an app with better features.

When they were asked to use adjectives to describe mobile apps, a male, aged 54, replied:

Power. Ease. Efficient. Entertainment. Information, time saving, makes life easier. I feel good about them. I feel younger. I feel I am in with times and I feel upgraded and empowered.

A Gen X male, aged 59, stated:

These days these apps on the smartphone are everything. They are your lifeline. Without these you don't exist in the country or in the world for that matter. You can talk, you can send message, you can send videos, audios, transfer money, receive money, book taxis, listen to music, see movies, I mean … everything.

Table 7. Beliefs About Mobile Apps

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Useful/valuable/comforting/interesting	2	0	6	3	7
2	Empowering/technologically upgraded	2	1	1	4	7
3	Productive	4	1	0	4	8
4	Important for survival in today's world/indispensable/necessity	4	0	0	1	5
5	Loss of human interaction/feel disconnected	4	3	0	0	7

When asked if the over involvement with apps was affecting human relations, this respondent replied:

I think the next generation that is going to be born are going to be a bunch of fools. There will be no human contact, there will be only machine people….. I see myself also, suppose five people go to a restaurant, all five of us looking at our phone, not talking. That touch has been lost.

A Gen X male, aged 54, remarked:

It's taken the human interface away from life. The relations are not on a personal basis. Even on someone's birthday, we would SMS or WhatsApp him, instead of picking up the phone and calling up. To me its taken away the personal touch away from life.

The observations are summarized in Table 7.

Almost all of the respondents replied that with the usage of apps, they felt technologically upgraded. A few of the Gen X respondents admitted that with the usage of these apps, they felt empowered. One of the Gen X males remarked that using mobile apps made him feel younger and in with the times. All the other respondents claimed that using apps was a way of life and a necessity in today's world. A female, aged 35, said that the usage of some apps gave her a comforting feeling and it was reassuring to use them. All of them agreed that it made life very convenient. However, almost all members of the Gen X group pointed out the fact that the use of mobile apps was making people more disconnected. The level of engagement/involvement with the smartphone was much higher than the level of interaction with fellow beings or enjoying nature.

Security

The usage of the mobile apps requires the disclosure of some information like location of the individual. M-commerce or m-banking transactions also include sharing of the debit/credit card details, PIN, passwords while conducting commercial transactions. The interviewees were asked about how safe they felt while disclosing such confidential information and conducting commercial transactions through their mobile.

A male aged 49 (Gen X) said: Not really. So I don't disclose too many things. A Gen Y female aged 35 replied: I am very, very uncomfortable with this... even though they have a lot of security and send you an SMS on your phone, …. I am still not very comfortable about the security system and how much reliable this is. I feel reliability is still a big issue. A male aged 54 (Gen X) said: It doesn't give a safe feeling. It might be safe but doesn't give a safe feeling. I am uncomfortable disclosing info on mobile apps…. When asked about the commercial transactions that he was using on the banking apps, he replied: I would feel safer doing commercial transactions on the website. I do it on the mobile app only in emergencies. The observations are summarized in Table 8.

As regards the security of the information disclosed on the app, there was no commonality observed within the age groups. Some of the respondents in both Gen X and Gen Y were comfortable disclosing information and conducting commercial transactions, while others were not. There was no clear demarcation observed between the age groups.

Discomfort Without Mobile Apps

As mobile apps are a fairly recent phenomenon, it was important to gauge the importance of mobile apps for the respondents in transacting their everyday life and also ascertain the level of dependence that they had on these apps. The interviewees were asked to express about how they would feel if mobile apps were removed from their phones.

A Gen Y male, aged 22, said:

I would feel very insecure … as I am new to Delhi. I will not be able to travel from Metro or any bus service. I have to ask a lot of persons about where I have to go, which bus I have to take. I can't travel by cab also because it is also through app. So I will be in a lot of trouble. (As regards entertainment and communication)… ya, it will be a dull life, there will be no music, no internet and totally cut off from all the social sector.

A female aged 35 (Gen Y) stated:

I would feel extremely handicapped… again I would be dependent on so many people, I wouldn't want to call up my husband in the middle of his work and ask him for directions. I wouldn't want to go to a client completely unaware, because currencies are changing, by the minute.

Another Gen Y female, aged 35, said:

Very difficult to survive, because as of now mobile app has already become as a habit. Navigating, socializing. Even for me as a mother it is difficult to cope with my kids' homework because everything I am checking through mobile app.

A male aged 36 (Gen Y) said: It will become difficult to survive. We have become so habitual to use apps, addicted…I can't dream of being without apps. Life will be boring.

The responses are tabulated in Table 9

A commonality observed between both Gen X and Gen Y consumers, irrespective of their intensity of usage, was that they would feel extremely handicapped without mobile apps. All the Gen Y users replied that life would become boring without mobile apps, whereas this sentiment was voiced only by a few Gen X users.

Table 8. Security Risk

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Not sure how secure it is/don't disclose too many things	1	2	0	2	5
2	It is safe	2	1	13	5	21

Table 9. Discomfort Without Mobile Apps

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Cannot survive/handicapped	3	3	7	5	18
2	Life is boring/dull	2	1	8	5	15
3	Would not be able to travel	1	0	4	2	7
4	Will be in trouble/will have to depend on many people/ will feel lost, insecure	0	0	5	2	7
5	Totally cut off socially/disconnected	3	3	7	5	18
6	Would not want to be completely unaware	3	1	7	4	15

Table 10. Personality Traits

		Gen X		Gen Y		
	Items	Male	Female	Male	Female	Sources*
1	Competing with friends	0	0	6	0	6
2	First one to adopt/try new technology	2	0	8	2	12

Personality Traits

A Gen Y male, aged 36, said: There is competition among friends to find new apps … or hmmm… apps with better features. A Gen Y male, aged 25, said: I wouldn't use an app if a friend recommended one to me… I like to go the App store and find one that suits my needs. This perspective emerged during the FGD also with most of the male Gen Y members admitting to having a sense of competition among friends to download a new app from the App store. They admitted that they spent a considerable amount of time browsing the App store, looking for new apps, downloading new apps, using them and posting ratings and reviews on the site. The same question was posed to the Gen X users, but they did not visit the online App store. When the interviewees were asked if they were the first ones to try out a new technology, some of the Gen X males and most of the Gen Y males replied in the affirmative. These findings point to the fact that a sense of competition, a need for uniqueness and personal innovativeness are necessary ingredients for the adoption of mobile apps. The results of Tables 1–10 have been used to draw the conclusions presented in the next section.

Conclusion

Mobile apps were primarily being used for convenience, entertainment, to remain in touch socially, to be updated on information, to be technologically updated and to save time and money. The users found the use of mobile apps advantageous because these were handy and could be used while on the move providing 24*7 access.

These features represent the perceived benefits to the user. It was observed that greater the perceived benefits, greater was the usage of mobile apps in terms of number of apps and the time spent on apps. This finding is consistent with that of Venkatesh et al. (2003) with no differences being noted across the two categories of users. In terms of effort expectancy, although all the respondents acknowledged that mobile apps were easy to learn, there were differences in patterns of usage among Gen X and Gen Y users. This result contradicts the findings of Venkatesh et al. (2003), where ease of use is an important determinant for technology adoption. A probable reason for this could be that India is at a lower level of technological development than the Western counterparts. As regards perceived risk, there were mixed responses and hence no differentiating pattern between the two categories of users.

The discomfort due to perceived risk affected the intensity of usage of the mobile apps, but did not lead to total discontinuation of the app. Another critical observation is that the more intensive the use of the mobile apps, the less was the perceived risk felt by the consumers. Thus, perceived risk can be categorized as an inhibitor for the use of mobile apps. Exploring the social influence on how the individuals were introduced to new apps, all of the respondents agreed to peer influence being a driver for use of the apps. In case of the Gen X customers, social influence was limited to peer influence only, whereas for the Gen Y users, it was mass influence in addition to peer influence. This result is also in line with the findings of Venkatesh et al. (2003). It was also observed that the Gen Y users helped in the diffusion of innovation of the technology in society.

A key theme which emerged from this study is that the Gen Y users proactively browse the App stores to discover new apps or find apps with better features. In this sense, there is a sense of competitiveness to be 'one up' in the peer group and be the person who recommends better apps. It can be postulated that these respondents had a high need to be unique and to stand out in the group and also possess a high degree of innovativeness to try out new things.

While all respondents unequivocally echoed positive beliefs and advantages of using mobile apps, a theme that emerged from among the Gen X consumers was that the use of mobile apps made them lose out on human interaction and made them feel very disconnected in spite of being connected.

Managerial Implications

The implication for managers through this study is that the adoption of mobile apps depends on highlighting the perceived benefits and designing an interface which is easy to learn and navigate through. The perceived security risk and the negative beliefs surrounding mobile apps, which are present in the minds of the user, have to be alleviated in order that mobile apps are adopted.

Limitations and Scope for Future Research

The list of factors that have been drawn up by this research is based on the insights available from 29 respondents in the NCR. This affects the generalizability of results for the entire Indian population. Furthermore, the researcher has attempted to study a few factors affecting the adoption of mobile apps and this list is by no means exhaustive. Two new themes that emerged from this study are, the feeling of loss of human interaction due to use of mobile apps and the presence of certain personality traits, which affect the adoption of apps. Future research can empirically test the effect of these on the adoption of mobile apps.

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