

## Gender differences in smartphone usage patterns of adolescents

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### ABSTRACT

The number of smartphone users throughout the world is increasing day by day. Even the age of smartphone access, too, is decreasing with time. Today, smartphone addiction is the most important concern of parents and caretakers of teenagers. The increasing time spent by teenagers on smartphone raises the concern why they spend so much time on it. The present research tries to explore gender differences in smartphone usage pattern of adolescents and therefore, tries to explore possible reasons for both genders for increasing smartphone addiction. The present study was conducted on a sample of 300 adolescents and findings suggest that females and males have significantly different pattern of smartphone usage. The present study also tries to explore causes of problematic smartphone usage among females (as they spend significantly more amount of time on smartphones than males) and possible solutions for the same.

**Keywords:** *Gender Differences, Smartphone Usage Pattern, Adolescents, Hrs. per Week, Social Networking Sites, gaming applications, online shopping applications, pictures applications, entertainment applications, knowledge applications, security applications, fitness applications.*

In the past two decades, accessibility to technology has drastically evolved, the credit for this goes to revolution in computer knowledge. Computers started becoming available in smaller and smaller, more and more compact devices, with more and more advanced features irrespective of smaller size of the devices. The most popular of such devices is smartphone. Internet is an important catalyst to this fastest technological revolution till date, i.e. smartphones. This device is like a handy computer. It has reached in hands of every other person, it has become accessible to almost everyone in a very short time. Access to internet is available at one's fingertips due to smartphone technology. Today, in the form of smartphones, a huge amount of data easily accommodates in our pockets. Like other technology, smartphone services too, have become increasingly personalized and customizable to one's individual needs (Han, MS, & Kim, 2017). Another important factor that increased penetration of smartphones in people's lives is its reducing cost. With service providers like Reliance Jio, internet has become quite cheap, it is cheaper than food as well. Therefore, access to smartphone has been an indivisible part of people living in modern era.

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## Gender Differences in Smartphone Usage Patterns of Adolescents

Smartphones have replaced almost every other screen, even when people are watching TV or using their laptop, they keep checking their smartphones, and people are using multiple screens simultaneously. Earlier people used to watch screens for leisure or work, this used to be a scheduled activity. Today, they have to take some time out of the screen time for the other activities. Smartphone has become one of the most private thing one owns. From one's memories with family and close friends, to private conversations, to one's shopping list, bank details and a lot of other personal information, it has everything. One's smartphone has almost every information about an individual, maybe more than what even their closest mates know.

Since smartphones come with variety of features, like camera, location, ability to upgrade into newer versions, ability to install various applications, there are multiple choices available to its users. Smartphone helps people in almost everything, like making friends, dating, finding a route, getting one's questions answered, clicking photos, sharing those pictures with others, making video calls, sending greetings, getting household help, finding teachers, shopping for groceries, clothing, cosmetics, and almost every other thing, getting fitness plans, tracking one's physical activity, etc. There is a smartphone application available for almost everything. In this modern digital world, the way one uses internet, or, to be more specific, smartphones, is also a part of their habits. For example, how much time is spent on digital activities? Which digital activities are more preferred over others? Which digital activities are given how much time? etc. In the present research, smartphone usage pattern refers to the way in which smartphone is used by its users, like the amount of time spent on smartphone, & preferences given to usage of particular smartphone applications over others. Gender differences have always been an important factor whenever any pattern of behavior is studied in social sciences. This gives a very crucial demographic information, and ultimately helps researchers, educators, and policy makers to understand the issue in more depth. Like any other habits, there are significant gender differences in smartphone habits as well.

### LITERATURE REVIEW

There is enough evidence stating that males and females have different patterns of internet activities and different preferences for mobile phone/ smartphone usage. Males are more likely to involve in problematic use of computers and internet in past. In their research, (Bianchi & Phillips, 2005) observed that mobile phone usage is gender neutral. Though, the purpose of using phones for them might be different. Digital media's problematic usage has significant gender differences, these differences are chiefly due to biological, psychosocial and sociocultural differences (S.-Y. Lee et al., 2018) Many researchers say that males spend more time on smartphone than females. Females are more likely to use social networking sites and instant messaging applications than males, whereas, males spend more time on their smartphone than females (Anshari et al., 2016). Another research (Weiser, 2000) shows that males use smartphone for leisure and entertainment and females use smartphones for interpersonal communications. This research also shows that use of internet for all forms of interpersonal communication and information gathering is done more by females as compared to males. Also, use of internet for gaming, entertainment, shopping, searching for romance and sex related information is done more frequently among males. They estimate that internet usage among females is increasing with time, and after a few years, men and women won't show much difference in terms of time spent on internet. In the year 2005, among all internet users of America, 72% were men, and their mobile usage was prominently for gaming purpose. Not only this, women were more frequent users of functions like shopping, communication, and emergency purpose. Men, on the other hand, used mobiles

## Gender Differences in Smartphone Usage Patterns of Adolescents

more frequently for office work, group conferencing, news updates, and entertainment (gaming and music) (Totten, Lipscomb, Cook, & Lesch, 2005).

### *Objective of the study*

- To identify if there are gender differences in smartphone usage, and if yes, how both gender are more inclined towards usage of particular smartphone application over others.

### *Hypotheses*

1. There is no significant difference between female and male adolescents in hours spent on smartphone.
2. There is no significant difference between female and male adolescents in use of social networking sites on smartphones.
3. There is no significant difference between female and male adolescents in playing games on smartphone.
4. There is no significant difference between female and male adolescents in using online shopping applications on smartphone.
5. There is no significant difference between female and male adolescents in using pictures related applications on smartphone
6. There is no significant difference between female and male adolescents in using smartphones for entertainment purpose.
7. There is no significant difference between female and male adolescents in using smartphones for enhancing knowledge.
8. There is no significant difference between female and male adolescents in usage of security functions of smartphones.
9. There is no significant difference between female and male adolescents in using fitness applications of smartphones.

## **METHODOLOGY**

The present study was conducted to find out if female and male adolescents use smartphones differently, and try to explore possible reasons behind their inclinations for usage of particular applications over others. To do this task, researcher prepared a questionnaire to analyze smartphone usage behaviors of adolescents, and collected the data from 300 adolescents (150 female, 150 male) from various schools and colleges by purposive sampling. Mean age of sample was 15.87, whereas, mean age of females was 15.83, and that of males was 15.91.

### *Tool*

**Smartphone usage behavior questionnaire:** This questionnaire was prepared by the researcher in order to study pattern of smartphone usage of an individual. It covers major aspects of smartphone usage like hours spent on smartphone, and preference to use various applications like social networking sites (09 items), gaming applications (03 items), online shopping applications (03 items), pictures applications (03 items), entertainment applications (03 items), knowledge applications (02 items), security applications (02 items), and fitness applications (02 items). Various questions regarding these applications are to be answered by the participant on a likert scale with following options: never, sometimes, frequently, and always.

## Gender Differences in Smartphone Usage Patterns of Adolescents

The data was collected using above material only after getting informed consent of the participants, after the data was collection, the calculations were done, and 't' test was run on the data to find out the statistical difference between the groups.

### RESULTS

The statistical analysis revealed that, female and male adolescents have differences in terms of smartphone usage behavior in such a way that their difference is significant in usage of a few apps and not significant in usage of other apps. The results are discussed in detail below:

Females (M=22.52, SD=18.43) spend more time on smartphone as compared to men (M=20.33, SD=13.66),  $t(298) = 2.61$ ,  $p < 0.01$ . They were also significantly high users of the following: usage of social networking sites: females (M=11.52, SD=6.67), males (M=9.24, SD=5.72),  $t(298) = 3.17$ ,  $p < 0.01$ , usage of entertainment applications: females (M=6.28, SD=2.71), males (M= 6.28, SD=2.71),  $t(298) = 2.15$ ,  $p = 0.01$ , and use of security functions: females (M=3.36, SD=1.82), males (M=2.93, SD=1.83),  $t(298) = 2.05$ ,  $p < 0.05$ . Thus, the hypotheses of no difference are rejected.

On the other side, males (M=2.24, SD=1.83) spend more time in playing games in smartphones than females (M=2.86, SD=2.17),  $t(298) = -2.66$ ,  $p < 0.01$ , and males (M=3.76, SD=2.59) also shop more using smartphone applications than females (M=5.11, SD=3.73),  $t(298) = -3.62$ ,  $p < 0.01$ . Thus, the hypotheses of no difference are rejected.

*Table 1 showing summary of t-test of smartphone usage behavior patterns among adolescents of both gender*

Variables	Females		Males		t (298)	P
	M	SD	M	SD		
Hrs. per week	25.22	18.43	20.33	13.66	2.61**	0.004
Social networking sites	11.52	6.67	9.24	5.72	3.17**	0.000
Gaming	2.24	1.83	2.86	2.17	-2.66**	0.004
Online shopping	3.76	2.59	5.11	3.73	-3.62**	0.000
Pictures	7.08	3.61	6.88	4.78	0.4	0.341
Entertainment	6.28	2.71	5.58	2.91	2.15**	0.016
Knowledge	5.31	3.05	4.96	2.86	1.01	0.155
Security	3.36	1.82	2.93	1.83	2.05*	0.020
Fitness	2.81	2.84	3.24	2.53	-1.37	0.085

There were no significant differences in usage of pictures, knowledge and fitness related applications between females and males. Thus, the hypotheses of no difference are accepted.

### DISCUSSION

The findings of the present study show that smartphone usage behavior of adolescents varies significantly among both gender in terms of using certain applications more over others. For applications/ like picture applications, knowledge and fitness related applications, the difference between both genders was not significant.

In the present study, it was observed that female adolescents spend more time on smartphones as compared to males. However, Various studies in past have said that males use technology more than females, and they spend more time on computers, laptops and smartphones than females (Chen et al., 2017; E. J. Lee & Kim, 2018; Morahan-Martin, 2004; Totten et al., 2005; Weiser, 2000). There are also studies which say females spend more time

## Gender Differences in Smartphone Usage Patterns of Adolescents

on mobiles than males (Andone et al., 2016; “Kantar IMRB & MMA Feature Phone Usage and Behaviour Report (Overview) – India 2016-17,” n.d.; “Women are more addicted to their phones than men, says totally unsurprising research,” 2017; “Women More Prone To Smartphone Addiction Than Men: Study | Tech Times,” n.d.; www.ETBrandEquity.com, n.d.). In a study conducted 19 years ago, it was mentioned that adolescent girls are not given access to mobiles and internet as their career and studies are not given much importance to. Back then, mobiles phones and other techno-gadgets were considered to be “boys-toys” (Weiser, 2000). But, the time has changed a lot now. Technology use by teenagers is not restricted to study purpose only now, the scope of smartphone has widened to a great extent in present time. Most parents give access of smartphone to their child for safety reasons (Lenhart, Ling, Campbell, & Purcell, 2010). Considering the increasing number of crimes against women and teenage girls (Gowen, 2018), it is quite obvious why girls easily get smartphones compared to boys. According to (Morahan-Martin, 2004), Internet is empowering women in ways that seemed impossible a decade ago and Online activism has been helpful in generating support for various women’s issues, thus, an increasing usage of smartphones by females, is also an indicative of women empowerment, more and more women coming forward on digital platform to express themselves, to discuss their issues, and to try to find out solutions to various problems they face, thus be more independent and powerful than they were before.

The findings of present study also suggest that females are more active users of social networking sites, entertainment applications, and security functions of smartphones than males. Whereas, males are more active users of gaming applications and online shopping applications from smartphones than females. The findings of present study has a good amount of supportive research. In a Chinese study by Chen et al. (2017), the pattern of smartphone usage varied significantly among males and females. Males preferred playing games, watching videos, and listening to music, whereas, females preferred usage of communication and social networking applications. Additionally, researchers also noted that playing online games among males, and using social networks among females are important predictors of smartphone addiction. In another study, women are more frequent users of functions like shopping, communication, and emergency purpose. Men, on the other hand, use mobiles more frequently for office work, group conferencing, news updates, and entertainment (gaming and music) (Totten et al., 2005). Females who are more inclined towards usage of smartphones for socialization purpose, they use smartphone to express their hostility and aggression, and be more socially acceptable (S.-Y. Lee et al., 2018). They use social networking sites to express themselves, and raise awareness about various concerns they are going through. This also explains why women in the present study are more frequent users of entertainment applications. In a recent study (Nguyen, 2019), it was said that entertainment roles available to the underrepresented people are increasing in the world of entertainment these days. As women too, are quite underrepresented, they feel more connected with the roles that are being discussed through entertainment media, and thus, female adolescents prefer use of entertainment applications to a greater extent. The perceived frequency of video gaming is more in men than women. The possible reasons for boys’ preference for online gaming is not much explored in the present research, as this itself is a very large topic. When it comes to gaming, there are various genres in gaming, and for choosing each genre, one’s motives are likely to be different, the underlying personality traits are different (Braun, Stopfer, Müller, Beutel, & Egloff, 2016; Granic, Lobel, & Engels, 2014; S.-Y. Lee et al., 2018; Liu, Lin, Pan, & Lin, 2016; Osman, Talib, Sanusi, Shiang-Yen, & Alwi, 2012; Seok & DaCosta, 2015). According to Pew research Lenhart et al., (2010), it is observed that most of the online game players do so for socialization purpose, they see

## Gender Differences in Smartphone Usage Patterns of Adolescents

gaming as one of the recreational activity with their friends. But socialization through online gaming is not as intense as socialization through social networking sites, specifically, by females. Women keep away from video gaming due to reasons like unrealistic body images of characters, hyper sexualized imagery of characters, objectification of female body etc. (Cruea & Park, 2012). Though many studies have said that females are more frequent users of online shopping, the present research says the opposite. In a recent statement by CEO of Myntra.com, he has mentioned that most of their buyers are men (India Today Web Desk, 2018) Possible reasons behind this are that, compared to men, a less number of women own their personal smartphone (Lenhart et al., 2010), also, women are generally more selective and prefer to actually see the product and try it in reality before actually buying one. Not only this, when it comes to females, the products they use are available in markets and shops with a much wider variety and much cheaper prices than online stores, which is not the case with products purchased by men. For males, the products available in online stores are more in variety and cheaper in price as compared to markets and shops.

A very important concern which researcher wants to highlight in the research is the female's increasing use of social networking sites. As most of the studies above say, that women's smartphone usage is more due to their increasing usage of social networking sites, it is important for today's educators, mental health workers, policy makers and parents to understand why girls are prominently using smartphones for socialization? Most of research till date says that women use social networking sites for fulfilling their communication needs. This brings light to an important issue. Is society, or family and friends not sufficient enough to give a listening ear to these teenage girls? Since the time is rapidly changing, women are getting more and more exposure, we say that they are getting more empowered. Yes, social media has an important role in this, but it is also important that steps needs to be taken in order to make the society and its people ready to be more accepting towards the changing attitudes of modern women. Society needs to come above the stereotypical gender specific roles, and be more gender neutral. The use of social networking sites by females to talk about their issues, express their hostility, which, is a result of many years of suppression and treatment as a secondary gender, indicates the intensity with which, they are demanding for a change. Suppression of any group of society inhibits them from utilizing various opportunities for self-growth, and in turn, results into wastage of a huge amount of talent from society. If the adolescent girls get proper guidance, they can be great contributors to society, and if not, they might remain frustrated and their suppressed hostility, might, in turn, be very harmful for the upcoming generations to which, they will be mothering.

Overall, the present study highlights upon the different patterns of smartphone usage among adolescent girls and boys, and tries to unfold possible reasons behind these differences. These results are helpful to understand the upcoming generation and their needs better. There is a need to understand digital behaviors of people, and through that, try to explore possible psychosocial concerns of people and therefore, make plans towards better mental health of people living in society. Smartphones are inevitable part of today's life, and thus, can be a great tool to not only understand people's behaviors, but also make smart interventions. More detailed investigation of smartphone usage behavior is important, in order to create awareness among people, specifically adolescents for more sensible and creative usage of smartphones for their own lives as well as for betterment of society.

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## Gender Differences in Smartphone Usage Patterns of Adolescents

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### ***Conflict of Interest***

The author declared no conflict of interests.

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