

Research Article

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Role of Age and Gender in Internet Vulnerability Among Students

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Abstract

Internet has revolutionized communications and methods of commerce by allowing various computer networks around the world to interconnect, it has also penetrated the life of students and has brought a paradigm shift in terms of education as well. India is the world's second largest online market, with nearly two-thirds of the internet population being young adults, making it critical to focus on the pattern of internet use particularly in young adults, as India has one of the world's youngest populations, creating a demographic dividend for the country. Therefore, the purpose of this study was to assess the role of age and gender in Internet use among students, as well as to investigate the most preferred Internet task among students. A 2 (age) x 2 (gender) between-group factorial design was adopted to collect data from 400 students within the age group 17-19 and 22-24 using the Internet Addiction Test (IAT) developed by [1], that measures the severity of self-reported compulsive use of the Internet. The study showed a significant gender difference as male students were found to use internet more than female students. No difference was found age wise in terms of internet use as well as no significant interaction effect was found. Findings of the study implies the role of socio-cultural aspects in internet use as well as prevailing digital divide between males and females.

Keywords: Internet; Vulnerability; Factorial design; Young adults

Role of Age and Gender in Internet Vulnerability Among Students

The Internet has revolutionized human endeavours and has a significant impact on how people live in contemporary society. According to research released by the Internet and Mobile Association of India [2] about 346 million Indians participate in online activities such as e-commerce and digital payments. The analysis showed that this figure is more than the estimated 331 million US residents that participate in digital transactions. According to the IAMAI study,

"Internet in India," online transactions in India have increased by a record 51% from 230 million in 2019 due to the global coronavirus pandemic. It claimed that both in urban and rural regions, there are more men than women who utilize the internet. In India, the top three activities for internet users are social media, entertainment, and communications. In India, there are currently 692 million active internet users, including 351 million in the country's rural areas and 341 in its metropolitan areas. According to the research, India

would have 900 million internet users by 2025. The whole public now uses the Internet more than any other medium, especially kids and teenagers. According to [3], more than 1.5 billion people used the Internet frequently in 2009. Various names were given to the uncontrolled use of the internet such as 'computer addiction', 'online addiction', 'cyber addiction', 'pathological internet use', 'excessive internet use', 'internet addiction disorder', 'net addiction', 'cyberspace addiction', 'problematic internet use', 'technologic addiction', 'compulsive internet use' and 'internet behavior

addiction' [4-11]. Coined the term "problematic Internet use" (PIU) and defined it as "a maladaptive preoccupation with Internet use, experienced as irresistible, for periods of time longer than intended". PIU can also be classified into specific and generalized [12]. Generalised PIU refers to specific Internet material like chat rooms, e-mail, and social networks like Facebook and Twitter, whereas specific PIU refers to content that exists independently of the Internet, such as gambling and video games.

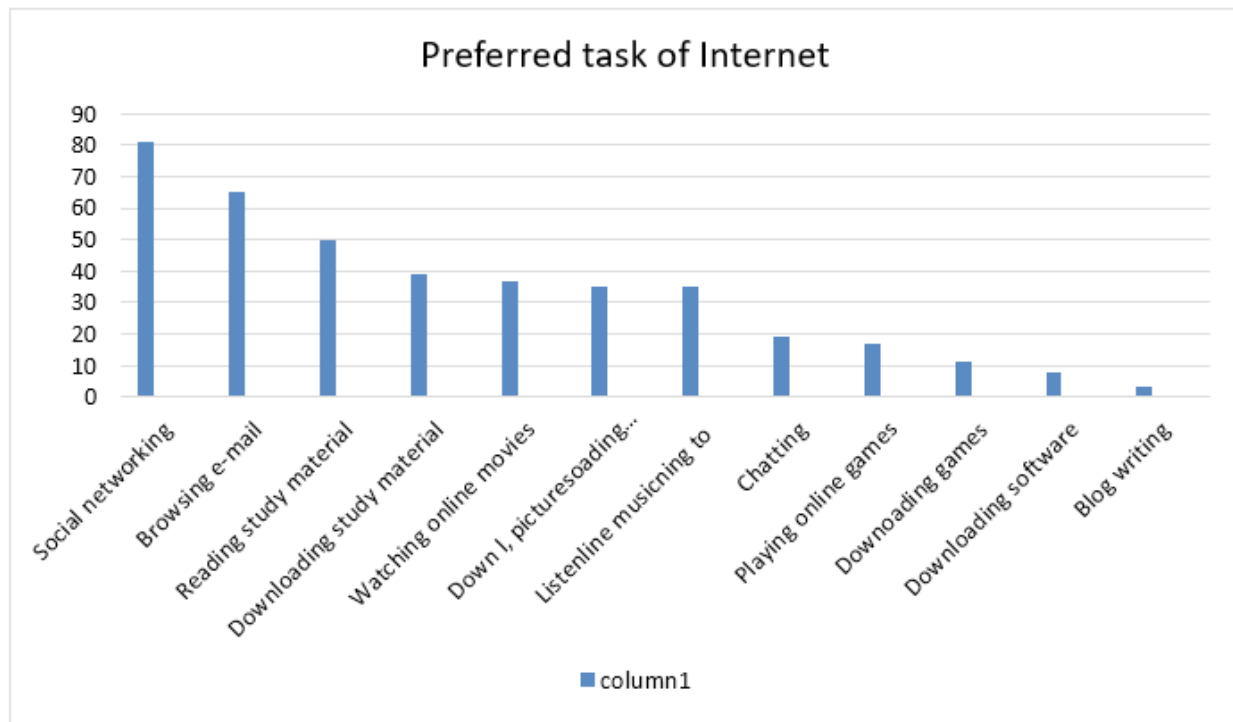


Figure 1

Young KS [1] defined internet addiction as a sickness characterised by excessive internet use and an inability to regulate online behaviour. When not online, a person who displays this syndrome frequently feels worried, melancholy, or empty [13]. Their use of the internet is so extensive that it starts to affect their performance at the job, in class, or at home. The sufferers begin to cover up how much they rely on the Internet because of this. According to [14], late childhood and early adolescence are the most likely times for PIU to start. Many young people experience stress as they go through the biological, psychological, and social changes of adolescence. The harmful effects of Internet use are much more likely to affect adolescents with mental and behavioural issues [14].

The Internet is used by children and teenagers for socializing as well as for entertainment purposes including watching films and television shows, listening to music, and playing online games. As a result, children and adolescents spend a significant amount of time online, which has a negative impact on their mood and jeopardizes their ability to do well in school and interact with others. The use of the internet for chat rooms, shopping, entertainment, pornography,

and video games is also linked to drinking, using illegal substances, having more sexual partners, and having a poorer sense of value. On the other hand, there is a link between academic Internet use and improvements in parent-child interactions, self-worth, and substance use [15]. There has been evidence of a negative correlation between the amount of time spent playing online games and academic achievement as well as a positive correlation between playing violent online games and aggressive behaviour [16,17]. Claims that excessive Internet use has a negative influence on children and teenagers' mental and physical health as well as raising their risk of aggression. He has emphasised the rise in Internet addiction and the substantial co-morbidity of this illness with other psychiatric disorders.

There have been an unexpectedly large number of definitions, conceptualizations, and treatments because of growing anxiety over excessive Internet use. Though theoretical examination, measurement validation, and research into computing etiological hypotheses and analogous behavioural patterns have all advanced far more slowly than such approaches.

The sorts of applications and underlying causes of Internet addiction vary by gender. While women prefer close friendships and love partners and prefer anonymous communication to hide their appearance, men are more likely to seek out power and sexual fantasies online. Women are more prone to become addicted to chatting, instant messaging, and online shopping while men are more likely to become addicted to online games, cyber porn, and gambling.

Bellamy & Hanewicz [18] discovered that females exhibit a substantially larger perception that relationships made in chat rooms are just as essential as those formed outside of chat rooms when examining the issue of difference between genders. On the other hand, men are more likely than women to believe that it is simpler to build relationships online than in person. The age group of persons 55 and older have the greatest rate of growth among Internet users, while those between the ages of 18 and 34 make up the “most active online users” [19]. Additionally, according to projections made by Pastore in 2000, by 2004 nearly 91% of people in this age bracket will be online. Among those contributing significantly to this rise are college students. In sum, there is empirical evidence that the vulnerability of students to the Internet is an emerging concern.

Two sociodemographic characteristics-gender and age-and their association with internet vulnerability were of special interest in this study. Although there is a large body of research examining the relationship of gender to internet vulnerability, relatively few studies have investigated differences in internet vulnerability related to age, particularly in adolescents - to emerging adults in this context.

While an investigation of Internet use among students is a worthwhile endeavour, it is even more valuable to study the preference of students for different Internet tasks.

Research Questions

The present study was undertaken to find out answers to the following research questions.

1. Do age and gender make a difference in Internet use?
2. Which is the most preferred task on the Internet among students?

Objectives

The main objectives of the present study were

- (i) to assess the role of age and gender in Internet use among students.
- (ii) to explore the most preferred task of Internet among students.

It was hypothesized that there would be differences between age groups and genders in Internet use.

Method

Plan and Design

The study involved 2(age) x2 (gender) between-group factorial design where males and females from the Age group (17-19) and Age group (22-24) were taken. There were 400 students, 100 in

each of the four cells. The dependent measure involves the use of the Internet.

Participants

The present study consisted of purposive samples of 400 students of five-year Integrated master's courses, Post Graduate courses as well as Ph.D. courses from the University of Hyderabad, Hyderabad. First, the participants were divided into two groups depending on their age. The age range of the first group was 17-19 and that of the second group was 22-24. The average ages of the two groups were 18.4 years and 23.2 years respectively. Each group was further divided into two groups based on their gender. Each group consisted of an equal number of students.

Instruments

The Internet questionnaire was used for this study, which consisted of 3 parts. Part I was used to get information about subjects. Part II was an adaptation of the Internet Addiction Test (IAT) developed by [1], which is a 20-item 5-point Likert scale that measures the severity of self-reported compulsive use of the Internet. The students were required to rate this five-point scale ranging from “not at all” to “always”. Total internet addiction scores are calculated, with possible scores for the sum of 20 items ranging from 20 to 100. The scale showed very good internal consistency, with an alpha coefficient of 0.93 in the present study.

According to Young's criteria, total IAT scores 20-39 represent average users with complete control of their internet use, scores 40-69 represent over-users with frequent problems caused by their internet use, and scores 70-100 represent internet addicts with significant problems caused by their internet use. Part III was designed by the Investigator to find out the preference for 12 Internet tasks. In this part, the subject needs to rank these 12 tasks as per their order of preference.

Procedure

A purposive sample of 550 students was taken in the study. The students were from the University of Hyderabad, and they were pursuing integrated five-year courses in Science and Arts and some students were pursuing Post graduation and Ph.D. courses in different fields. The subjects were from different states as well as from different cultures which represented a good sample for the study. After the selection of the sample, the consent of the subjects was taken. Out of 550 students, four hundred students were selected randomly.

Students who gave their consent were administered individually and in a group of five to ten. The respondents were requested to fill in the details of their personal profile and to respond or answer in the answer sheet. The scoring was done according to the scoring key. Then the total score for each item was calculated.

Results

The purpose of the present study was to examine the role of age and gender in Internet use and to explore the most preferred task of the Internet among students. The data were analyzed using 2x2 ANOVA to assess the role of age and gender as well as their interaction effect.

(a) Role of age and gender in Internet use:

From the ANOVA done on the Internet use scale, it is evident that the main effect of gender is found to be significant, $F(1,396) = 4.31, p < .05$. This indicates that male students ($M = 48.84$) use the Internet more than the female students ($M = 46.0$). The main effect of Age is not significant, $F(1,396) = 1.44, ns$. The Age x Gender interaction effect is also not significant, $F(1,396) = 1.35, ns$. The result showed that there was an effect of gender on internet use. However, no significant effect of age and interaction effect of age and gender was found.

(b) Preferred task of the Internet:

The frequency was calculated to know the preference of students for different internet tasks. Out of 12 specified tasks, students gave the first preference to social networking. The following ranks were given by the students: 81(20.3%) for social networking, for browsing e-mail 65(16.3%), reading study material 50(12.5%), downloading study material 39(9.8%), watching online movies 37(9.3%), downloading movies, music, pictures 35(8.8%), listening to online music 35(8.8%), chatting 19(4.8%), playing online games 17(4.3%), downloading games 11(2.8%), downloading software 8(2.0%) and finally blog writing 3(0.8%). It is revealed that the highest usage of the internet is for social networking and the lowest usage is for blogs. There is no difference between age and gender in these frequencies.

Discussion

The first objective of the study was to assess the role of age and gender in Internet use among students. From the result, it was found that there was a significant difference between male and female participants in internet use though no significant difference was noted between the two age groups.

The gender difference may be due to sociocultural factors such as social and cultural role learning, stereotypes, and media. This is in line with the gender research methods which recognize sociocultural factors which make a gender difference. The theories of gender differences mainly include social-cultural theory (Wood and Eagly, 2012). It said that the number of male Internet users is more than female users in both rural and urban areas as women continue to struggle for a rightful place in accessing and using the Internet, and men continue to dominate technology [20, 21]. Scholarly studies have identified socio-demographic factors as the prime reasons for this digital divide particularly in India [22-24]. According to the World Bank's Gender Statistics database, 20.5% of the female population aged 15+ and 76% of the male equivalent population participate in the labour force [25]. Females dominate in employment in agriculture while males dominate significantly in industry and services. The most serious barriers are affordability, literacy and skills, and relevance, the latter of which is partly due to a lack of awareness of the utility of mobile phones (50% of adult women are aware of mobile internet, compared to 71% of men in 2019; [26]).

However, no difference was found between the two age groups under study (17-19) and (22-24) in terms of internet usage. The National Young Generation Policy (NYP)-2014 defines the 'young

generation' as people aged 15 to 29 years using digital media for a variety of purposes, including learning, entertainment, and innovation. According to a survey conducted by the Mobile Ecosystem Forum from November to December 2019, the age group of 16 to 24 years had the highest penetration rate among smartphone users, with 37%. This was followed by users between the ages of 24 and 35. Smartphone penetration was lower among older Indians surveyed. Therefore, for both groups smartphones as well as internet have become an important part of their lives because they allow them to quickly learn and explore a wide range of arenas.

The second objective of the study was to explore the most preferred task of the Internet among students. It can be concluded from the results that students use the Internet as a platform for entertainment to enjoy and to obtain more information about their personal interests and hobbies. [27] investigated internet knowledge and usage among various professional students in India. Most participants used the internet for social networking sites rather than for academic purposes. Deepika (2015) investigated the relationship between internet addiction and academic achievement among young adults. According to the study, boys are more susceptible to internet addiction than girls, possibly because boys are more technologically savvy and like to experiment than girls. Several studies have identified male gender as a risk factor for IAD [28, 29]. According to research, females use the internet primarily for social interactions [30], whereas males engage in activities more predictive of IAD, such as pornography, cybersex, and online gaming [31].

The Internet is not the enemy just because people become dependent on it. It has many important and necessary benefits. It is fast, ecologically sound, convenient, and informative. In many ways, it makes our lives much simpler. It becomes a problem when people become so engrossed and enmeshed in online activities, and their "other" lives to the point of neglecting their health, relationships, jobs, and other responsibilities. It is an effort to catalyze a societal response in which the overwhelming emphasis would be to create awareness among people about Internet addiction and its negative effect on health and well-being [32-34].

Limitations and Implications

Digital media has both positive and negative effects on our young generations. Young generations must be clear on the purpose of using digital media and how long they are online and make it beneficial to their personal and social networking purpose. It is critical to monitor internet usage trends to address disparities in internet usage. The digital gender divide in India will widen if women are not connected, at least through mobile devices. Not only are access statistics important, but so is what can be gained by advancing the use of digital tools. As internet access opens new avenues for women's empowerment, providing ample opportunities. In today's world, the focus should be on e-inclusivity as well as digital wellbeing. Further studies should be done considering the issues of internet usage at grassroot level, micro level analysis should be done for the same.

Acknowledgement

None.

Conflict of Interest

None.

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