

## Demographic Factors as Predictors of Internet Addiction among Polytechnic Library Users in Nigeria: Effect on Academic Performance

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### Article Info

#### Article type:

Research Article

#### Article history:

Received January 12, 2024

Received in revised form March 12, 2024

Accepted June 25, 2024

Published online June 28, 2024

#### Keywords:

internet addiction, polytechnic students, online activities, library users, Nigeria

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### ABSTRACT

**Objective:** The purpose of the study is to investigate the level of Internet addiction among polytechnic library users in Nigeria and effect on their academic performance.

**Methods:** The study adopted descriptive design and data was collected from 511 library users in 16 federal polytechnics in Nigeria.

**Results:** The study found that the extent of internet addiction among the federal polytechnic library users' is high, and they use the Internet to engage in activities like social communications such as birthdays, making friends, etc., entertainment & fun, and searching for information. Only few use the Internet for academic purposes. The results also revealed that more than half of the Federal Polytechnic students engage in different activities on the Internet for more than 2 hours a day, and the majority agree that to a great extent the excessive use of the Internet for different activities affect their studies. The results also show that male students use the Internet for different online activities than their female counterparts and it affects their studies.

**Conclusion:** Internet addiction has become chronic in the present-day digital world. Therefore, it is necessary to take rectification measures to avoid facing the perils of Internet Addiction. The findings will be useful to education authorities as considering the increasing trend of IA in the recent years, the high prevalence of IA in students therefore calls for authorities to develop a national policy for the use of the Internet among students. If this is not addressed as a priority, the country must anticipate a large population dependent on the Internet, requiring medical attention.

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**Cite this article:** Ejitagha, S., & Adams, B. C. (2024). Demographic Factors as predictors of internet addiction among polytechnic library users in Nigeria: Effect on academic performance. *Informology*, 3(1), 9-30.



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## **Introduction**

The technological revolution has increased Internet adoption worldwide, contributing to escalating internet traffic per connection, as people move to higher-bandwidth broadband connections and availability of several Internet applications (Pontes et al., 2015). The functionality of the Internet has been expanded mainly because of the emergence of mobile technologies, which provide an easy way to gratify their urges, thus paving a path to addictive Internet use, that is, Internet addiction (Wong et al., 2015). Internet addiction can be defined as spending too much time on the Internet, accompanied by psychological dependence on overuse of the Internet (Hsieh, 2019). Most scholars describe IA as an impulse control disorder characterized by excessive or poorly controlled preoccupations, urges or behaviors regarding computer use and Internet access that lead to impairment or distress (Wang, Ren, & Long, 2019). The clinical application of IA may be supported by prior research that has demonstrated associations with a number of psychological impairments, such as low levels of well-being, self-esteem, and self-control (Mei et al., 2016); poor social support; sleep problems; and depression, anxiety, stress, and loneliness (Ostovar et al., 2016).

Internet addiction is a behavioral problem that has gained increasing scientific recognition in the last decade, with some researchers claiming it is a "21st Century epidemic" (Kuss & Griffiths, 2014). Internet addiction is pathological and is considered problematic Internet use (PIU). The consequences include withdrawal behavior and preoccupation with non-essential and non-business activities, pathological gambling (Bisen & Deshpande, 2018). One of the warning signals of IA is the time spent on the Internet by individuals. American Psychiatric Association (APA, 2013) suggests that when individuals are continuously engaged in playing Internet games, over some time, the gaming prompts a neurological response of feeling pleasure or reward, ultimately resulting in addictive behavior. In addition, Shapira et al. (2003) documented that excessive use of the Internet longer than expected is more likely to result in addictive behavior.

Internet addiction in puberty and young adults can negatively impact life satisfaction and engagement (Shahnaz & Karim, 2014), which may negatively affect cognitive functioning (Park, et al., 2011), lead to poor academic performance, and engagement in hazardous activities (Usman, Alavi, & Shafeq, 2014). Young and De Abreu, (2011) reported that the psychopathologic symptoms of Internet addiction includes salience (the respondent most likely feels preoccupied with the Internet, hides the behavior from others, and may display a loss of interest in other activities such as lectures only to prefer more solitary time online), excessive use (the respondent engages in excessive online behavior and compulsive usage, and is intermittently unable to control time online that he or she hides from others), neglect work (job or school performance and productivity are most likely compromised due to the amount of time spent online), anticipation (the respondent most likely thinks about being online when not at the computer and

feels compelled to use the Internet when offline), lack of control (the respondent has trouble managing his or her online time, frequently stays online longer than intended, and others may complain about the amount of time he or she spends online) and neglect social life (the respondent frequently forms new relationships with fellow online users and uses the Internet to establish social connections that may be missing in his or her life). Wallace (2014) reports that Internet addiction is widespread amongst young people at middle schools, high schools and university campuses where laptops, computers and computer labs are easily accessed.

### *Problem of the Statement*

As the most practical means of accessing information and communicating others, the Internet occupies a significant place in many people's lives, from their homes to their mobile phones. The Internet has become accessible almost everywhere, from personal computers to free connection points and cell/mobile phones. Many people cannot live without Internet, checking on the gadget since they wake up until their bedtime (Bisen & Deshpande, 2018). The facilities available on the Internet include: sending and receiving emails; written or visual communication; communication via social media; accessing all kinds of information and doing research; immediate access to news reports and events worldwide; sharing one's own knowledge, opinions and ideas; entertainment activities, including listening to music, watching films and playing games; online banking; and buying and selling goods and services (Bisen & Deshpande, 2018). However, despite all these advantages, overutilization may cause a condition called Internet addiction (Zhang et al., 2018). Davis (2001) described healthy Internet use as employment for a reasonable length of time for a specific purpose without leading to any cognitive or behavioral disturbance.

Studies like Jahanian and Seifury (2013) and Kubey, Lavin and Barrows (2001) reported that Internet addiction affects academic achievement, students get depressed as they feel lonely, ashamed, tired, and sleep deprived. At the same time, psychological factors such as loneliness, depression and social anxiety are also risk factors for Internet addiction. Increased time spent online may lead to a decrease in face-to-face communication during lecture time. Therefore, the present study aims to investigate the demographic factors as predictors of Internet addiction among Polytechnic students in Nigeria. To achieve this, the following research questions were raised to guide the study:

### *Research Questions*

- RQ1. To what extent are the polytechnic library users addicted to the Internet in Nigeria?
- RQ2. What are the most common online activities the students engage in?
- RQ3. How long do the students engage in an online activity for a day?
- RQ4. To what extent does the excessive Internet-use affect students' lectures?

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## Literature review

### *Internet addiction among students*

The use of the internet is highly individualized. The healthy way of using it is to accomplish a planned objective within a reasonable period with no behavioral or intellectual distress. Some individuals succeed in limiting their internet use, whereas others cannot regulate themselves (Diomidous, Chardalias, & Magita, 2016). Zamzuri et al. (2021) studied Internet Addiction among Youth in Tertiary Education, public universities in Semarang, Indonesia. The results revealed that there has been an influence of peer pressure, connecting and coordination towards Internet addiction among students. It is claimed that when individuals give up all other leisure time activities to follow online activities, there is the risk of Internet addiction (Chou et al., 2005). Leung and Lee (2012) stated that Internet activities, especially social networking sites and online games had a significant and positive relationship with Internet addiction.

Joseph et al. (2021) estimated the pooled prevalence of Internet addiction (IA) among college students in India and suggest that the nationally representative data of about 20% to 40% of college students in India are at risk for IA. Suler (2004) claimed that incapability of controlling the amount of time spent online predicts Internet addiction. Baturay and Toker (2019) studied Internet addiction among college students in terms of causes and effects and found that game addiction, neglecting daily chores, bad relationships with professors are significantly associated with Internet addiction. Misuse of the Internet has become a health concern worldwide and is growing swiftly and steadily. The field of Internet addiction (IA) has experienced significant debates over the years. WHO included Internet gaming disorder in the chapter of substance and behavioral addiction in the 11th edition of the International Classification of Diseases and Related Health Problems (ICD-11) (Scutti, 2018). In a study conducted by Fumero et al. (2018), it was found that higher addiction levels were associated with adolescents, and the younger generation was preoccupied with the Internet, using various media devices, gaming addiction, smartphone addiction, etc. In addition, a study among 529 middle school students in Japan found that accessibility of gaming devices and twitter were the significant factors contributing to the IA (Kawabe et al., 2021).

Suler (2004) defined neglecting one's work and personal obligations as one of the symptoms of Internet addiction. Being more problematic for younger and more recent users, neglect of work is an indicator of Internet addiction; young people are particularly reported to experience more problems related to work neglect (Widyanto & McMurrin 2004). Internet addiction may result in a delay or ignorance to do main responsibilities at work, school, and home (Ko et al. 2009). Subhashini and Praveen (2018) studied Internet addiction among professional college students of Hassan, Karnataka and found that of the 300 professional college students, 173 (57.7%) were

found to be Internet addicted and 67 (38.7%) among them were found to be depressed and a statistically significant association ( $p < 0.05$ , OR 3.6, 95% CI 2.02–6.39) was found. The authors recommended that Internet Addiction is common among the college students and adequate steps have to be taken to prevent the students from falling into addiction which is considered as a mental health issue. Zenebe et al. (2021) studied the prevalence and associated factors of Internet addiction among undergraduate university students in Ethiopia and found a high prevalence of Internet addiction among Wollo University students. Factors associated with Internet addiction were spending more time, having mental distress, playing online games, current khat chewing, and current alcohol use.

Bisen and Deshpande (2018) found that male students use smart phones more frequently than females. The addiction also depends on the type of online activities individuals engage in. Researchers reported that boys differed from girls on why they used the Internet: Boys spent more time on the Internet than girls for massive multiplayer online role-playing games, online games and adult sites, while girls made intense use of social networks (Annalakshmi, Thasleema & Pooja Sri 2020). Ahmad, et al. (2020) studied usage and influence of social media on polytechnic students in Nigerian tertiary institutions. The results show that Internet addiction level was (47%), distraction (35%), anti-social behavior (7%), cyber bullying (2%), and writing and spelling skills deficiency (28%) as the influences of social media on polytechnic studies. The study concludes that the social media platforms mostly used are WhatsApp, Facebook, Instagram, and YouTube, which are used mainly for socialization, information, and academic purposes and may also perhaps suggest the reason for addiction to social media. Olawade et al. (2020) studied Internet Addiction among University Students during Covid-19 Lockdown in Institutions in Nigeria. The results revealed that the majority of the students were categorized as normal internet users (45%), 42% as mildly addicted, and 13% as moderately addicted. None of the students were severely addicted. The study concluded that the closure of schools, restriction of movement, reduced engagements, and seizures of allowances/stipends during the lockdown made the students vulnerable to IA.

### *Common online activities students engaged in*

Various types of online activities, such as online gaming, social networking, online gambling, online shopping, virtual sex, and information overload, are related to IA (Wu, et al. 2015). A recent study showed that some online users were becoming addicted to the Internet in the same way that others became addicted to drugs, alcohol, or gambling, which resulted in academic failure, reduced work performance, even marital discord, and separation (Zenebe, et al. 2021). Mariavinifa, Govindarajan and Felix (2021) studied the prevalence and associated factors of Internet addiction among college students using smartphone in Tamil Nadu and found that out of the five hundred students, 38.8 % are normal users, 37% are mild addicts, 21% are moderate

addicts, 3.2% are severe addicts. The author also reported that the overall prevalence of Internet addiction was 61.2%, and that the degree of Internet addiction was significantly associated with age, time spent daily on the Internet and using Internet for social media, online communications and playing online games. The study concluded that the prevalence of Internet addiction is high among college students.

The study by Adebayo and Ochayi (2022) found that the addiction of undergraduates to the Internet negatively influences their academic performance, daily activities relationship with people. The study reported that activities such as downloading from the internet, chatting with friends, picture uploads, YouTube streaming, shopping, and internet games were the activities undergraduates involve in most, with the Internet which affects their academic performance. Individuals addicted to using the internet are more likely to spend time in diverse activities. In one of the recent studies conducted in Myanmar, more than 60% of the students used to engage in several activities: emailing (17%), gaming (50%), watching movies (90%), social media (93%), chatting (78%) and studies (63%) (Oo, Soe & Oo, 2021). Johansson and Gotestam (2004) stated in their study that types of activities on the Internet like playing games and reading newspapers/magazines impact Internet addiction. The study by Adebayo and Ochayi (2022) found that chat, entertainment, and social networking are the most disturbing activities associated with the utilization of Internet services. Also, few students showed the problem of sleeplessness at night and decline in academic performance due to Internet usage. The study concluded that social activities were seen as the most activities students carry out on the Internet. Compulsive Internet use lowers life satisfaction and academic performance, and leads to problematic ICT usage of the mobile, online gaming technologies, and Internet (Dhir et al. 2015). Some studies of Internet addiction tend to include video game addiction and online gaming addiction, as among other Internet activities (Rehbein & Moble 2013). In fact, individuals most frequently use the Internet for online gaming (50.9%) of all Internet users, followed by information services, (46.8%). Game playing is found to be one of the predictors of Internet dependence (Jiang 2014). Supporting this finding, Muller et al. (2014) reported in their study that Internet addicts considerably access a variety of gambling, gaming, and pornographic sites.

### *Time spent on online activities*

As IA has the potential to result in psychological distress, anxiety, low grade, it is necessary to examine the extent to which students engage on the Internet in terms of how much time they spend on unproductive and non-business use. Balasubramanian and Parayitam (2023) recently studied antecedents and consequences of Internet addiction among school and college students in India. The results revealed that the students spent more two hours a day on networking, video streaming, short video apps, educational apps, chat apps, online shopping apps, money involved apps, etc. Using YouTube Students can watch videos, answer questions, and discuss content.

Additionally, students can create videos to share with others. Undergraduates spend more time on Facebook, Twitter and other social media through smartphones that are now in abundance among these youths (Balasubramanian & Parayitam 2023). Many students cannot go for two-three hours without checking and updating their profiles on these social networks even at the detriment of other activities such as educational and career pursuit. In a study of 884 students of different universities in Nigeria, Olowu and Seri (2012) revealed that students in Nigeria are spending too much time on social networking sites at the detriment of other necessary things such as their studies. In a recently conducted study among 412 students in medical universities in Myanmar, it was found that 83% of students used to spend over 5 hours every day (Oo, Soe, & Oo, 2021). In their experimental study with two groups of school children, 16–18 years old, Nalwa and Anand (2003) found that Internet addicts were reported to delay other work in exchange to spend time online and suffer from poor time management and lack of control.

### *Influence of gender on internet addiction*

Internet usage also differs in males and females; they have different interests in what they do on the Internet. The studies on the impact of gender are mixed. For example, Bisen and Deshpande (2017) found that male students use smart phones more frequently than females. The addiction also depends on the type of online activities individuals engage in. Mitchell (2000) found that the younger generation prefers online games and pornography, and women and older addicts tend to use chat forums and social networking. Some researchers reported that males and females exhibit different behavioral patterns concerning IA. Annalakshmi, Thasleema & Pooja Sri, (2020) reported that boys differed from girls on why they used the Internet: Boys spent more time on the Internet than girls for massive multiplayer online role-playing games, online games and adult sites, while girls made intense use of social networks

It is also interesting to note that males use the Internet for pleasure rather than for searching information when compared to females. How they spend time on the Internet results in IA differs according to gender. Oktug (2012) reported that IA is higher among women when compared to men, but there were no differences in gender about how they express their emotions about addiction. In a recently conducted study on a sample of 3,380 first-year college students in China, the researchers reported that males showed higher scores of IA when compared to females (Shan et al., 2021). Similar gender differences were noted among university students in the Slovak Republic (Rigelsky et al., 2021).

Gender is an important variable in terms of Internet addiction, researchers have done different studies on Internet addiction in males and females, most of them conclude that the male gender is Internet addicts, they use the Internet for online gaming, communication, and entertainment while the female use the Internet for social interactions and entertainment (Gunduz et al., 2017).

Concerning the kind of use, gender differences have been described in the literature, with males being the ones who spend most hours per week on e-mail, playing online games, and browsing in web pages while females are the ones who mostly use chats or social networks (Fernandez-Villa, 2015).

### *Effects of excessive Internet-use on students' studies*

Kubey et al. (2001) emphasized that too much Internet use for leisure was strongly associated with weak academic performance. When adolescents use the Internet more and more, instead of doing their schoolwork, it results in weaker scholar performance (Caplan 2003). This explains that although the Internet has been suggested as an educational and an ideal research tool, there may be a decrease in study habits and grades while an increase at missed classes; in surfing irrelevant web sites and chat room gossip; and playing interactive games instead of doing productive works due to its excessive use (Young, 1999). The result of an empirical qualitative study Chou (2001) found that poor grades is one of the negative outcomes of heavy Internet use. Obsessive Internet users experience lower scholar performance, and ends up with problematic ICT use comprising Internet, mobile, and online gaming (Dhir et al., 2015).

### **Materials and Methods**

The study adopted descriptive design and covered library users in federal polytechnics in Nigeria. Some federal polytechnics in Nigeria were randomly selected from the six geopolitical zones in Nigeria to participate in the study. Students using the polytechnic libraries were asked to respond to the study. Questionnaire was used to collect data from students of the various polytechnics. The scale extent of Internet Addiction was adapted from Internet Addiction Scale by Young, (1998). The scale is made up of twenty items in a five-point Likert scale (from 1 = "to no extent" to 5 = "a very great extent") designed to collect information on the extent of Internet addiction. The researchers with the help of other research assistants visited the various polytechnics to distribute questionnaires to the students using the polytechnic libraries at the time of the visit using convenient sampling technique. Data collection started August 2023 and ended November 2023.

Data obtained from the study were analyzed using percentages for the demographic section of the questionnaire, and mean was used to analyze data to answer research questions on the Internet addiction scale. Results are presented in tables and charts.



## Results

**Table 1. The breakdown of the number of library users that responded.**

Institution	State	No of library Users that responded
Federal Polytechnic Ukana	Akwa-Ibom State	45
Federal Polytechnic Ekowe	Bayelsa State	33
Federal Polytechnic Ugep	Cross River State	22
Auchi Polytechnic, Auchi	Edo State	49
Federal Polytechnic of Oil and Gas, Bonny	Rivers State	29
Akanu Ibiam Federal Polytechnic Unwana, Afikpo.	Ebonyi State.	24
Federal Polytechnic Ado Ekiti.	Ekiti State	19
Federal Polytechnic Bida.	Niger State	29
Federal Polytechnic Bauchi.	Bauchi State.	40
Federal Polytechnic Daura	Katsina State	38
Federal Polytechnic Ede.	Osun State.	9
Federal Polytechnic Mubi, Mubi	Adamawa State.	12
Federal Polytechnic Nekede, Owerri.	Imo State.	31
Federal Polytechnic Oko.	Anambra State.	47
Federal Polytechnic Ohodo	Enugu State.	26
Federal Polytechnic Ilaro	Ogun State.	58
<b>Total</b>		<b>511</b>

In total, 511 library users responded to the study. The breakdown of the number of library users that responded (Table 1).

### *Biographical data of respondents*

**Table 2. Biographical data of respondents.**

Class level	No. of respondents	Percentage
ND 1	117	22.9%
ND 2	93	18.2%
HND 1	178	34.8%
HND 2	123	24.1%
<b>Total</b>	<b>511</b>	<b>100%</b>
<b>Gender</b>		
Male	227	44.4%
Female	284	55.6%
<b>Total</b>	<b>511</b>	<b>100%</b>

Results in Table 2 shows that the highest number (178: 34.8%) of respondents indicated as HND 1, followed by respondents in HND 2 (123: 24.1%), ND 1 (117: 22.9%), and least by ND 2 (93: 18.2%). Breakdown on gender revealed that more than half (172: 57.5%) indicated as female respondents, while 127 (42.5%) respondents indicated as male respondents.

**Table 3. Extent of Internet Addiction Polytechnic Library Users**

S/N	Internet addiction scale	To a Very Great Extent (5)	To a Great Extent (4)	To a Moderate Extent (3)	To a Small Extent (2)	To No Extent (1)	$\bar{x}$	Remark
1.	Do you stay online longer than you intended?	181	160	89	75	6	3.94	High
2.	Does your longer stay online affect academic work?	229	107	99	50	26	3.87	High
3.	do you prefer the excitement of The Internet to intimacy with your classmates?	132	98	139	89	53	3.85	High
4.	Do you form new relationships with fellow online users?	157	181	102	66	5	3.74	High
5.	Do you fear that life without the Internet would be boring, empty, or joyless?	162	187	102	21	39	3.73	High
6.	do people around you complain About the amount of time you spend online?	302	89	72	30	18	3.72	High
7.	Does the time spend online affect your school grades?	270	109	87	45	-	3.70	High
8.	Does your academic work suffer because of the Internet?	209	134	104	61	3	3.65	High
9.	do you become defensive or Secretive when asked about what you do online?	180	159	101	59	12	3.65	High
10	do you find yourself saying “just A few more minutes” when online?	231	145	100	35	-	3.64	High
11	Do you find yourself anticipating when you will go online again?	303	129	39	31	9	3.64	High
12	Do you lose sleep due to late night logins?	232	108	87	34	50	3.63	High
13	do you block out disturbing Thoughts about your life with soothing thoughts of the Internet?	201	160	72	67	11	3.63	High
14	Do you try to hide how long you’ve been online?	215	101	123	61	11	3.62	High
15	Do you feel depressed, moody or nervous when you are offline, which goes away when you are back online?	209	173	121	-	8	3.61	High
16	Do you snap, yell or feel annoyed if someone bothers you while you are online?	207	101	124	35	44	3.61	High
17	Do you try to cut down the amount of time you spend online?	129	139	130	81	32	3.60	High
18	Do you choose to spend more time online over going out	131	135	107	77	61	3.59	High

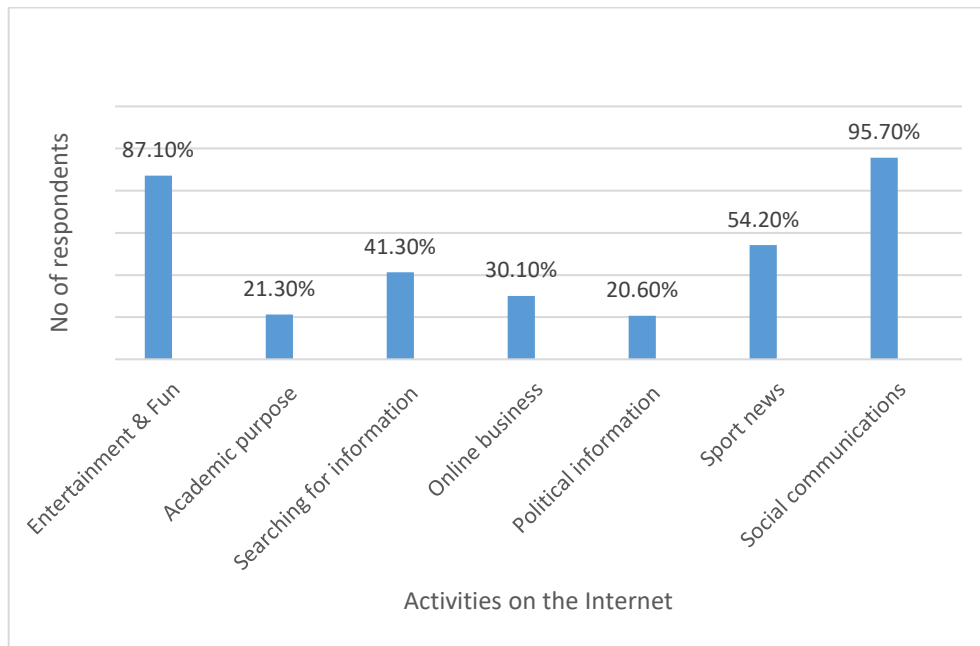
	with classmates?								
19	Do you feel preoccupied with the Internet when offline, or fantasize about being online?	114	7	163	145	82	2.92	Low	
20	Do you check your email before something else that you need to do?	32	78	132	170	99	2.87	Low	
N= 511		Criterion Mean = 3.00			Aggregate Mean = 3.48				

### *Extent of Internet Addiction Polytechnic Library Users*

Data in Table 3 revealed that the aggregate mean of 3.48 is higher than the criterion means of 3.00, which signifies that the extent of Internet addiction among the polytechnic library users is high. Therefore, it was concluded that there is a general tendency among students to exhibit behaviors associated with Internet addiction. For example, students stay online longer than they intended ( $\bar{x} = 3.94$ ), their longer stay online affect their academic work ( $\bar{x} = 3.87$ ), they prefer the excitement of the Internet to intimacy with their classmates ( $\bar{x} = 3.85$ ), they form new relationships with fellow online users ( $\bar{x} = 3.74$ ), they fear that life without the Internet would be boring, empty or joyless ( $\bar{x} = 3.73$ ), people around them complain about the amount of time they spend online ( $\bar{x} = 3.72$ ), the time spend online affect their school grades ( $\bar{x} = 3.70$ ), their academic work suffer because of the Internet ( $\bar{x} = 3.65$ ), they become defensive or secretive when asked about what you do online ( $\bar{x} = 3.65$ ), they find themselves saying “just a few more minutes” when online ( $\bar{x} = 3.64$ ), they find themselves anticipating when they will go online again ( $\bar{x} = 3.64$ ), they lose sleep due to late night log-ins ( $\bar{x} = 3.63$ ), they block out disturbing thoughts about their life with soothing thoughts of the Internet ( $\bar{x} = 3.63$ ), their try to hide how long they have been online ( $\bar{x} = 3.62$ ), they feel depressed, moody or nervous when they are offline, which goes away when they are back online ( $\bar{x} = 3.61$ ), they snap, yell or feel annoyed if someone bothers them while they are online ( $\bar{x} = 3.61$ ), they try to cut down the amount of time they spend online ( $\bar{x} = 3.60$ ), and they choose to spend more time online over going out with classmates ( $\bar{x} = 3.59$ ).

### *Most common internet activities the students engage in*

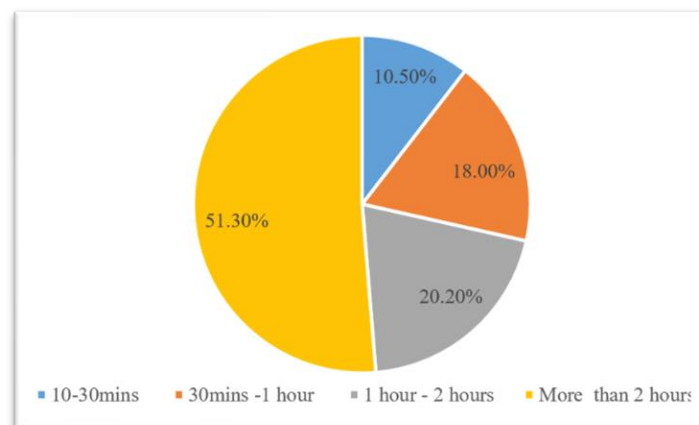
As shown in Figure 1, out of the 511 respondents, the majority (489: 95.7%) indicated that they engage in social communications such as birthdays, making friends, etc. followed by 445 (87.1%) respondents who indicated using Internet for entertainment & fun, more than half (277: 54.2%) of the respondents indicated using the Internet for Sport news, and almost half (211: 41.3%) of the respondents indicated using the Internet to search for information. Only few (154: 30.1%) of the respondents indicated using Internet for online business, academic purpose (109: 21.3%), and political information (104: 20.6%). This reveals that the students in the Federal Polytechnics in Nigeria use the Internet to engage in activities such as social communications such as birthdays, making friends, etc., entertainment & fun, and searching for information. Only few use the Internet for academic purposes.



**Figure 1. Most common activity students engage in on the Internet**

### *Time students spend on different activities on the Internet in a day*

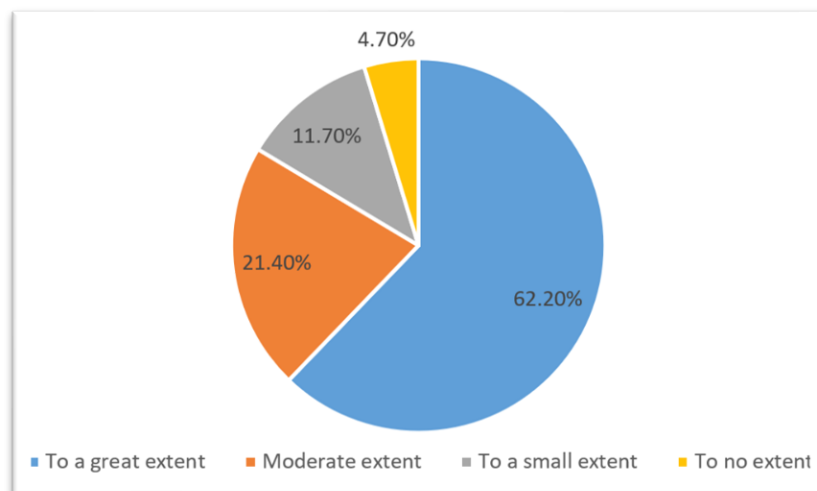
Results in Figure 2 shows that out of the 511 respondents, almost more than half (262: 51.3%) of the respondents indicated to be engage in using the Internet for more than 2 hours a day, followed by those who indicated engaging in activities on the Internet for between 1 to 2 hours a day (103: 20.2%), while, 92 (18.0%) respondents indicated engaging in different activities on the Internet for between 30 mins to 1 hour a day. Only 54 (10.5%) respondents indicated to be using the Internet for between 10 to 15 minutes a day. The results revealed that almost more than half of the Federal Polytechnic students engage in different activities on the Internet for more than 2 hours a day.



**Figure 2. Time spent on Internet in a day**

### *The extent of excessive use of Internet and effect on students' studies*

Overall, students were asked to rate the extent of excessive use of the Internet and effect on their studies. The majority (318: 62.2%) of the respondents agree that to a great extent the excessive use of Internet for different activities affect their studies. Followed by 109 (21.4%) respondents who agree that the excessive use of the Internet for different activities affect their studies to a moderate extent, and 60 (11.7%) respondents agree that the excessive use of the Internet for different activities affect their studies to a small extent. Only few (24: 4.7%) respondents agree that the excessive use of the Internet for different activities affect their studies to no extent. The results revealed that the students of the selected Federal Polytechnics in Nigeria agree that, to a great extent, the excessive use of the Internet for different activities affects their studies. The cross –tabulation of gender with results of the overall excessive use of Internet revealed that among the respondents who indicated to a great extent the excessive use of Internet for different activities affect their studies are more of male (209: 65.7%) students than females (Table 4). This shows that male students use the Internet for different online activities than their female counterparts and it affects their studies.



**Figure 3. Excessive use of the Internet and effect on studies**

**Table 2. Biographical data of respondents**

Gender	To a great extent	To a moderate extent	To a small extent	To no extent	total
Male	209 (65.7%)	15 (13.8%)	2(3.3%)	1 (4.2%)	227
Female	109 (34.3%)	94 (86.2%)	58 (96.7%)	23 (95.8%)	284
<b>Total</b>	<b>318</b>	<b>109</b>	<b>60</b>	<b>24</b>	<b>511</b>

## Discussion

### *Extent of Internet Addiction Polytechnic Library Users*

The study found that the extent of federal polytechnic library users' Internet addiction is high. This finding is consistent with the findings Mariavinifa, Govindarajan, and Felix 's (2021) who reported the prevalence and associated factors of social media addiction among college students using smartphone in Tamil Nadu and found that out of the five hundred students, the prevalence of Internet addiction is high among the college students as the overall prevalence of Internet addiction was 61.2%, and that the degree of Internet addiction was significantly associated with age, time spent daily on the Internet and using Internet for social media, online communications and playing online games. Students suffering from IA usually spend a lot of time online, regardless of their school responsibilities. Some of them even skip class and sacrifice sleep time, resulting in fatigue and low degree of involvement in classes. The stress under the poor school performance may lead to further involvement of online activities for adolescents in order to escape negative emotions (Kim, 2017). Internet addiction can reduce the young generation's productivity and cause cognitive dysfunction, poor academic performance, and physical, mental and behavioral disturbances (Joseph et al., 2021). Therefore, it is imperative to estimate IA's magnitude among Polytechnic students in Nigeria to obtain accurate epidemiological data to develop different strategies and programmes to intervene in this problem. Internet addiction has also been associated with negative academic consequences such as missed classes, lower grade, and even academic dismissal (Kubey, Lavin & Barrows, 2001).

### *Most common internet activities the students engage in*

The study revealed that the students mostly use the Internet to engage in online activities such as social communications such as birthdays, making friends, etc., entertainment & fun, and searching for information. Only few use the Internet for academic purposes. This shows that the polytechnic library users use the Internet for different online activities. For example, the study by Balasubramanian and Parayitam (2022) revealed that IA is positively related to time spent on networking, video streaming, short video apps, educational apps, chat apps, online shopping apps, money involved apps, etc. The study concluded that as IA has been recognized as a fast-growing addictive behavior, particularly among school and college students, research has been progressing rapidly to study the antecedents and consequences of the addictive behavior. Chou, Condon and Belland (2005) claimed that when individuals give up all other leisure time activities to follow online activities, there is the risk of Internet addiction. Leung and Lee (2012) stated that Internet activities, especially social networking sites and online games had a significant and positive relationship with Internet addiction. Ni et al. (2009) found that surfing on the Internet impacted Internet addiction. This finding supports the suggestions in previous studies

that extensive use of the Internet increases the risk of being an addict due to gaming, online gambling, watching pornography, and/or socializing on the net.

### *Time students spend on different activities on the Internet in a day*

The results of the present study revealed that almost more than half of the Federal Polytechnic students engage in different activities on the Internet for more than 2 hours a day. The finding of this study is in line with similar studies done on college students in Taiwan and three medical schools across three countries (Croatia, India, and Nigeria) (Lin, Ko, Wu, 2011). The possible explanation for the association between Internet usage time and Internet Addiction is that it might be as much a symptom as it is a cause. For example, Long-term Internet use and IA may cause physical problems, such as reduced physical activities and obesity (Eliacik, 2016), physical pain (e.g., neck, shoulder and back pain), impaired vision, and increased risk of accidents (e.g., falling, slipping, and bumps/collisions) (Kim, et al. 2017).

### *The extent of excessive use of social media and effect on students' studies*

The study found that the students of the Federal Polytechnics in Nigeria agree that to a great extent the excessive use of the Internet for different activities affect their studies. The results also show that male students use the Internet for different online activities than their female counterparts and it affects their studies. The association between IA and poor academic performance found in this study supported earlier findings (Huang & Leung, 2009). Studies found that “loss of control” moderates the association between IA and declining school performance (Huang & Leung, 2009). A recent study showed that some online users were becoming addicted to the Internet in the same way that others became addicted to drugs, alcohol, or gambling, which resulted in academic failure, reduced work performance, even marital discord and separation (Zenebe, et al. 2021).

## **Conclusion**

Internet addiction among the polytechnic library users is mostly derived from the online activity obsession. The ability to embrace new trends and technologies faster than the older generation has made it difficult to control their online activities due to the nature of the Internet that allows them to stay connected and informed.

Today, most students connect to the virtual world for recreational, academic, social, business and/or leisure time activities. An attendant risk is that we can also become preoccupied with virtual activities, as mobile devices allow us to stay connected wherever and whenever we wish. Some students have found themselves totally captured with virtual activities, many of which rely on Internet technology. Over time, many students have found themselves unconsciously plunged into Internet addiction, so much so that this is now a widely recognized disorder or problem.

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**Author Contributions**

Not applicable.

**Data Availability Statement**

Not applicable.

**Acknowledgements**

This work was funded by the Tertiary Education Trust Fund, Abuja, through the Delta State Polytechnic, Otefe-Oghara, Delta State, Nigeria. The authors are appreciative of the funding agency for its support.

**Ethical considerations**

Not applicable.

**Funding**

Not applicable.

**Conflict of interest**

Not applicable.

**Appendix A****Questionnaire****Demographics as Predictors of Internet Addiction among Polytechnic Library Users  
Questionnaire****Section A: Demographic information**

1. Name of Polytechnic: -----
2. Level of Study: ND One [    ], ND Two [    ], HND One [    ], HND Two [    ].
3. Gender: Male [    ], Female [    ].



## 1. Extent of Internet Addiction Scale

S/N	Please indicate the extent to which each of the following statements is true of you.  To what extent	To a Very Great Extent (5)	To a Great Extent (4)	To a Moderate Extent (3)	To a Small Extent (2)	To No Extent (1)
Q1.	Do you stay online longer than you intended?					
Q2.	Does your longer stay online affect academic work?					
Q3.	Do you prefer the excitement of the Internet to intimacy with your classmates?					
Q4.	Do you form new relationships with fellow online users?					
Q5.	Do people around you complain about the amount of time you spend online?					
Q6.	Does the time spend online affect your school grades?					
Q7.	Do you check your email before something else that you need to do?					
Q8.	Does your academic work suffer because of the Internet?					
Q9.	Do you become defensive or secretive when asked about what you do online?					
Q10.	Do you block out disturbing thoughts about your life with soothing thoughts of the Internet?					
Q11.	Do you find yourself anticipating when you will go online again?					
Q12.	Do you fear that life without the Internet would be boring, empty or joyless?					
Q13.	Do you snap, yell or feel annoyed if someone bothers you while you are online?					
Q14.	Do you lose sleep due to late night log-ins?					
Q15.	Do you feel preoccupied with the Internet when offline, or fantasize about being online?					
Q16.	Do you find yourself saying ‘‘just a few more minutes’’ when online?					
Q17.	Do you try to cut down the amount of time you spend online?					
Q18.	Do you try to hide how long you’ve been online?					
Q19.	Do you choose to spend more time online over going out with classmates?					
Q20.	Do you feel depressed, moody or nervous when you are offline, which goes away when you are back online?					

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**2. What are the most common activities students engaging on the Internet? (Tick as many that apply).**

- Entertainment & Fun----- [    ]  
Academic purpose ----- [    ]  
Searching for information -----[    ]  
Online business-- ----- [    ]  
Political information -----[    ]  
Sport news-----[    ]  
Social communications (e.g birthdays, making friends, etc.) [    ]

**3. How many minutes or hours do you spend on internet in a day?**

- 10-15 minutes ----- [    ]  
30 mins -1 hour----- [    ]  
1-2 hours ----- [    ]  
More than 2 hours -----[    ]

**4.Overall, to what extent do your excessive use of the Internet affect your studies?**

- To a great extent -----[    ]  
Moderate extent -----[    ]  
To a small extent -----[    ]  
To no extent -----[    ]

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