

The Contrast Between Demographic Variables and Internet Use: A Study of University Students

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Abstract – The objective of this research is to test whether the use of the Internet becomes problematic in the lives of university students and how demographic variables impact the subject of study. The Internet-Related Experiences (CERI) questionnaire proposed by Beranuy et al. (2009) was used. The results reveal that 77% of students have problems using the Internet, and 40% have frequent issues using the Internet. Additionally, the results show evidence that there is no difference in the level of internet use between the gender and age variables, however, with reference to the semester they are studying, there is a significant difference.

Keywords – addiction, problematic internet use, university students, demographic variables, CERI questionnaire.

1. Introduction

Internet has become the medium of choice for work, entertainment, and communication in the 21st century all over the world, and Mexico is no exception.

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The Mexican Institute of Statistics and Geography reports three important internet use activities: communication (93.8%), search for information (91.0%) and access to social networks (89.0%) [1]. Regarding the purchase of products or services, INEGI reported an increase of 5.6 percentage points in 2020 (27.7%) compared to 2019 (22.19%). In addition, they report that 34.8% of internet users are young people between the ages of 18 and 34.

The problematic use of the Internet (PIU) has been classified as a clinical and social problem [2]. PIU shows characteristics of addiction, such as excessive use, withdrawal, including anger or depression when access is restricted, intolerance, and negative consequences, including poor school performance, fatigue, or social isolation. PIU may be associated with other addictive behaviors, such as gaming disorder, or cyber-sex addiction [3] with the internet as a means to access other sources of addiction. Nonetheless, internet overuse has increased due to the rise of smartphones and social networking sites [3], [4], [5].

PIU is associated with certain personality traits, such as neuroticism and extraversion [6], and with behavioral, cognitive, emotional, and social factors such as depression, and lack of social or family support [7], materialism [8] and lack of religious faith [9], [10]. It appears to be more prevalent among males than females [4], [11], though this may be because males are more likely to be users of gaming or pornography sites. Support from friends, family, and significant others [7], [8], [9], as well as strong self-esteem, subjective well-being, and a sense of meaning of life are negatively correlated with PIU [6], [7], [12].

Cultural and technological differences existing among different countries and regions of the world also play a role in PIU [5], [11] with Asian countries, in particular South Korea and the Middle East, reporting higher percentages of problematic internet use among young people [4], [5] and Northern and

Western Europe reporting the lowest percentages. Some studies also show high PIU among Latin American countries, particularly Brazil, Chile [11], and Mexico [9].

PIU appears to be more prevalent among young people, especially adolescents. This may be because they have easier access to internet, more free time than adults to spend online, and less parental supervision than children [7], [10]. Risk-taking and novelty-seeking behaviors, and the tendency to distance oneself from the past and project oneself into the future, all characteristics of adolescents, may also lead to internet overuse [13].

Some studies have shown that it is young adults, especially university students, who tend to spend more time daily online [9], [11] and PIU appears to be rising in these groups as well. Older students, i.e., those at the university level, tend to need internet more, for both academic and personal activities [9], [14], [15] report that university students in Spain use the internet excessively and a high percentage report having problems for this reason. The first authors report that 79.6% of their respondents state that they have had behavioral conflicts due to internet overuse.

Many authors distinguish between problematic use of the internet and internet addiction [3]. In the context of university students, to a certain degree, there is little information on the study of problematic use of the Internet; instead, studies have focused on internet addiction. This study aims to contribute to closing that gap; therefore, the assumptions of this research are: the students of civil engineering of the Middle Zone Multidisciplinary Academic Unit overuse the internet very frequently and that there is a difference in relation to the level of internet use, according to the gender, age and semester of studies.

To explain these premises, the following objective is proposed: to determine the level of internet use in the students of Civil Engineering of the Middle Zone Multidisciplinary Academic Unit. In the same way, to check if there is a difference in the level of internet use between the variables gender, age and semester of the students of Civil Engineering of the Middle Zone Multidisciplinary Academic Unit.

2. Literature Review

Studies of problematic internet use in university students include that of [16] who provide evidence that Galician university students studying pedagogy, social education and basic education admit to using the internet on a regular basis; 99.5% use the internet with an average of 16 hours a day and connect via smartphone. They also report that this time is used to search for information related to studies, check the mail and visit social networks. In relation to gender,

men spend more time than women in this computer network.

Excessive internet use can lead to addiction, which is more prevalent in college students, causing depression, anxiety, attention deficit, poor academic performance, as well as social isolation [7], [17]. However, PIU has not been recognized as a pathology in diagnostic criteria manuals, such as the DSM-5 [18]. [19], conducted a study on university students in Colombia, their findings indicate that frequent use of the Internet triggers interruption of daily activities, but not an addiction.

In the Mexican context, [20] found that young university students from Tamaulipas and Puebla very often spend their time on the internet (38.82%) and noticed problems in their behavior due to this situation. [9] found that about 11% of university students show PIU, spending on average 8 hours a day on the internet; the authors emphasize, however, that their participants do not perceive themselves as being addicted to the internet.

[21] show evidence that adolescents and young people are the most vulnerable to problematic internet use, possibly because they have less self-control, less self-regulation and are more exposed to the internet and new technologies. Likewise, they state that psychological well-being and negative emotions are associated with, and favor problems related to the internet. In this same sense, [22] explain that this situation occurs because there is no self-regulation in the use of the internet.

Likewise, some authors [23], [24], found that the women in their study spend more time on the web than men do, and that adolescents spend more time on the internet than young university students. [25], on the other hand, found no significant difference in internet use between male and female engineering students in Mexico. Once the phenomenon of study is situated in theoretical and empirical reality, the need arises to investigate and test whether the use of the internet becomes problematic in the lives of university students and how demographic variables impact the subject of study.

3. Methodology

Research Design - The study follows a quantitative, hypothetical, deductive approach. The hypotheses to test correspond to a difference between groups, because it is intended to demonstrate that there is a difference between groups: gender, age, semester and level of internet use. [26]

Sample - A probabilistic sample was used since the entire population has the same opportunity to be selected through random selection, through stratified random sampling [27]. The study was carried out at the Middle Zone Multidisciplinary Academic Unit, a campus of the Universidad Autónoma de San Luis

Potosí, located in Río Verde, Mexico. The total population of the Middle Zone Multidisciplinary Academic Unit consists of 1553 students, however, the population was limited only to the students of the school of Civil Engineering, with a total of 184 students. From this data, the size of the sample for each semester is determined (Table 1).

Table 1. Sample by strata

Stratum Semester	Population	Weight	Sample	Men	Women
1	44	0.24	18	12	6
3	40	0.22	16	11	5
5	40	0.22	16	12	4
7	27	0.15	11	8	3
9	33	0.18	13	7	6
	184		74	50	24

Participants - Table 1 shows the population of Engineering students who were enrolled (184) in the semester in which the research was carried out. Likewise, the size of the sample (74) is observed. Subsequently, the proportion of the number of students in each semester was obtained, the value obtained was multiplied by the size of the sample and thus it was possible to have the number of students for each semester, finally from random numbers, the surveyed students were chosen. Participants were given the questionnaire which included information about the purpose of the study and the treatment the data would receive. They were told that participation was optional, and there would be no consequences to them if they declined to respond the questionnaire. Beyond demographic data such as gender, age, and semester of studies, no other personal information was collected.

Instrument - The Internet-Related Experiences questionnaire (CERI) [28] assesses internet abuse through 10 items classified into two factors: intrapersonal conflicts (items 4, 5, 6, 7, 9, 10) and interpersonal conflicts (items 1, 2, 3, 8). The item decade value ranges from 1 (not at all) to 4 (a lot). The minimum possible score is 10 and the maximum is 40.

A high score indicates the possibility of having problems with the use of the Internet. [29] propose a classification according to the score. The first tier includes people who have no problems using the Internet (scores from 10 to 17 points), the second corresponds to people with occasional problems (18 to 25 points), and the third are people with frequent problems (26 to 40 points).

An instrument reliability test was performed, obtaining 0.770 according to Cronbach's Alpha. The minimum acceptable value for Cronbach's alpha coefficient is 0.70, so this value is greater than the recommended value. The SPSS v.25 program was used to assess the descriptive statistics of the items, the level of internet use, and to determine if there is a difference between the groups.

4. Results

The sample includes more men than women, and more than half the participants (62.2%) are between 17 and 20 years of age. Most of the respondents are studying in their first semester at the university (Table 2).

Table 2. Profile of the students

Semester	Freq	%	Age	Freq.	%
1	19	25.7	<=16	3	4.1
3	15	20.3	17-20	46	62.2
5	17	23.0	21-24	23	31.1
7	10	13.5	>=25	2	2.6
9	13	17.6			
Total	74	100	Total	74	100

Descriptive analysis

Table 3 shows that the level of Internet abuse by students is occasional; that is, respondents show few problems with the use of the internet. (MGlobal= 2.27) noting that the item that causes the greatest conflict is spending time on the internet without realizing it; this is the variable with the highest estimate (MX5 = 2.69). On the contrary, the variable with the lowest value corresponds to getting angry or irritated when someone bothers them while they are online (MX1= 1.96).

Table 3. Description of the items

Variable	Mean	DST	Min	Max
x1	2.29	0.887	1	4
x2	2.39	0.967	1	4
x3	2.19	1.026	1	4
x4	1.96	0.955	1	4
x5	2.69	0.877	1	4
x6	2.16	1.030	1	4
x7	2.27	0.900	1	4
x8	2.29	1.083	1	4
x9	2.43	1.001	1	4
x10	2.04	1.040	1	4
Global	2.27	0.950	1	4

Internet use level - The results of the problematic internet use scores indicate that 47% of students have occasional problems, while 10% report internet overuse. This is seen in Table 4.

Table 4. Level of Internet use

Scores	%	Internet use
1 to 10	0	Never
11 to 20	47	Occasional
21 to 30	43	Frequent
31 to 40	10	Very frequent

Difference between groups - After verifying the normality of the data (statistical significance of the Kolmogorov-Smirnov Test greater than 0.05), the difference in the level of internet use between two groups was compared. This analysis includes the variables gender, age, and semester and is shown in Table 5.

Table 5. ANOVA test and significance

Variable	calculated	tables	Significance	Ho
Gender	.015	4.02	.904	Not rejected
Age	.877	1.95	.551	Not rejected
Semester	4.221	2.52	.004	Rejected

Results show that there are no significant differences between internet use in men and in women. The resulting p is greater (.904) than the significance value of 0.05. Also, the calculated F value (0.15) is less than the F in tables (4.02). Regarding age, the value of p (.551) is greater than the proposed significance value (0.05), indicating that there is no difference between age and internet use. Likewise, the value of F calculated (.877) is lower than the value of F in tables (1.95). Results also indicate that there are differences in the experiences related to the internet and the semester that the student is studying. The value of p (.004) is less than the value of significance proposed (0.05). The value of F was compared to determine if the means of the groups are equal. The results show that the value of F calculated (4.211) is greater than the F in tables (2.52), therefore, internet use differs depending on the students' semester.

5. Discussion

The results point out that although the level of internet use does not cause problems for the students of Civil Engineering of the Middle Zone Multidisciplinary Academic Unit, a significant percentage say they experience occasional problems due to the use of the internet. This is because they stop carrying out daily activities to spend more time connected to the internet and do not realize that the hours go by. This is especially worrisome in the light of [9] that indicates that students do not perceive they are overusing the internet, even if they report doing so. There seems to be cognitive dissonance at play.

Our results show no significant differences between genders in internet use, contrary to the findings of some other studies [4], [9], [11], though other research has also found no difference between these two groups [10], [25].

Age also does not seem to be a factor in internet overuse among the population studied, though other

research shows that younger students tend to show more PIU than older students [11]. Participants' semester of study has shown to affect internet use, though this has not been reported in other studies. The difference may be due to being busier in some semesters than in others.

It is worth emphasizing that some participants in our study do present a high level of internet use. Given that there is a correlation between PIU and poor academic achievement [9] university authorities should take measures to prevent it from becoming an addiction and affecting the student's academic performance or their mental health. These measures may include limiting the time or the places where students can be connected; for example, blocking access in classroom, [5], as well as training in values, and personal and social skills [23].

6. Conclusion

University students tend to spend a lot of their time connected to the internet, as they use it for their studies, as well as for personal communication and entertainment. This study sought to identify if this use was problematic among students of Civil Engineering at Middle Zone Multidisciplinary Academic Unit in Río Verde, Mexico. The study also sought to determine if internet use varied according to students' gender, age, or semester of studies. The findings indicate that only a small percentage of respondents report a high degree of internet usage. Gender and age of the students did not determine the degree of internet use, but the semester of studies did.

Based on the estimates obtained, the objectives proposed in this study were achieved. It was possible to determine the level of internet use and the difference between demographic variables among the students of Civil Engineering of the Middle Zone Multidisciplinary Academic Unit. Thus, the study contributes to the growing body of literature on the topic of problematic internet use in general, and more specifically, in Latin America, where there have been few studies thus far [9], [11].

7. Limitations

An important limitation of this study is that the results cannot be generalized, even when the sample was done in a probabilistic way; one reason is the small number of students in the school. For this reason, it is important to replicate this study, in the different schools of the Autonomous University of San Luis Potosí and in other higher education institutions. Another limitation is that it relies on self-reported data. Further studies can include interviews and/or observational approaches to understand, not only how much time university students spend online, but the type of activities they engage in.

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