PSYCHOSOCIAL IMPACT OF VIRTUAL NETWORKS ON UNIVERSITY STUDENTS

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Abstract

Technology has modified all aspects of the lives of individuals, making it more comfortable, this is a great achievement of humanity, but it has also made us dependent beings. The use of electronic platforms, social networks, applications (App), artificial intelligence, virtual assistants, among others, represent unimaginable achievements just 50 years ago. Daily life requires a smartphone, since we are not able to orient ourselves geographically, remember a phone number, or any information that is needed since it is easy to take a photo, carry the schedule of activities, financial services through banking online, have the Covid-19 vaccination record, or check food options at a food service, because a QR reader is required. In addition to the daily technological dependence, we find the attitudes and emotional dependence in which preferences, tastes, photographs, music, virtual approach to family and friends, and much more, become an essential support, especially in the young generations. With this framework, the aim is to evaluate the psychosocial impact of virtual networks on university students in the Republic of Panama. For this, a measurement instrument was designed that was applied remotely through Google form ©. The Likert-type format allowed inferential statistical analyzes to guarantee the discrimination index of the items, the reliability of the instrument through Cronbach's Alpha, as well as the construct validity with the factorial analysis using the SPSS 24 © software.
The results reveal that university students have a positive attitude towards virtual networks, which represent psychological and social support, which allows users an emotional protection that they use as a defense against the uncertainty of the day to day and about the near future. Thus, the psychosocial impact of virtual networks encourages emotional containment, in addition, they become social support when links are established with small close groups, regardless of their membership in extended groups. Another finding shows that not all the impact of virtual networks is positive, for example, it was discovered that sleep patterns are not healthy, in addition, the information they receive at night can generate anxiety, anguish and stress.

Keywords: Virtual networks, psychosocial impact, university students.

1. Introduction

Arce-García, Orviz-Martínez, and Cuervo-Carabel (2020), published the result of a study that aimed to analyze the emotional discourse of the news of the 10 main information newspapers in Spain and its relationship with the diffusion, attention, emotions, and feelings of Twitter users. To do this, they used big data analysis techniques applying algorithms. The importance of the research focuses on the fact that studies that analyze emotions allow identifying the state of public opinion, predicting stock and political movements. The authors highlight the differences between the studies of emotions, so that the structure of six basic emotions includes: happiness, sadness, anger, fear, disgust, and surprise; while the structure of eight is preferable because it encompasses: anticipation, disgust, anger, sadness, fear, confidence, surprise, and joy.

The findings indicate that the writings are expressions that seek to provoke those emotions that polarize trust and fear, so the news that provokes these emotions has more influence (Arce-García, Orviz-Martínez, & Cuervo-Carabel, 2020).

Brenner, Alexander, Quirke, Eustace-Cook, Leroy, Berry, Healy, Doyle, and Masterson (2021) developed a study on the redundancy of the concept of technological dependency. They indicate that it covers a continuum such that it describes attributes related to the area in which it is used. The authors suggest that in the case of requiring support due to technological dependency, the term technological

clinical assistance should be used, since the biopsychosocial context is complex and could imply unfavorable consequences for the person and their family.

Zhou, Hu, and Wang, (2019), presented an assisted diagnosis model to quantify mental disorders (MDAD), through the intensity of short texts from users on social networks. To do this, the sentiment analysis was divided into 11 dimensions and five mental disorders were used: depressive disorder, anxiety disorder, obsessive-compulsive disorder (OCD), bipolar disorder and panic disorder, collected on Twitter.

The authors mention that through sentiment distribution similarity calculations and Stochastic Gradient Descent (SGD), people with a high probability of having a mental disorder can be detected in real time. Mental health warnings can be made in time for users with an obvious emotional bias in their tweets. Thus, through the analysis of multipolarity of feelings, support for the prevention and diagnosis of mental disorders is achieved.

For Rodríguez and Garza (2019), it is possible to analyze the representation, detect and predict the emotional intensity of the user through the analysis of virtual networks. To do this, they used data mining of one of the most visited and popular social networking sites with close to 67 million Twitter users, ranking 13th in the best Alexa sites. The decision to use this repository is because it contains a sufficiently large number of users and comments in Spanish.

The analysis of data on the presence or absence of joy, anger, fear, and sadness, together with the previous or past emotional intensity, as well as the day of the week and the hour, allowed us to propose a model that uses three categories of relationship: with the user, with the contact and with the environment. The authors conclude that the prediction of emotional intensity can be used in marketing, monitoring emotional health, detecting depression and cyberbullying.

According to González and Muñoz (2016), technological networks allow users to interact, communicate, share content, create communities, direct their learning, and have virtual spaces in real time.

In Panama, the use of Facebook became popular until 2008 and, by 2014, more than a million people had already connected. That means 25.63% of the total population, which at that time amounted to 3,901,000 people.

1.1. Design

A non-experimental ex post facto, cross-sectional design was used, and the type of study is correlational.

1.2. Objectives

Evaluate the psychosocial impact of virtual networks on university students in the Republic of Panama.

2. Method

A measurement scale was built that was applied remotely through social networks and email to university students in Panama.

The instrument consists of 25 items that inquire about the use of electronic networks under a Likert-type scale with five response options from which six factors are derived. The construct validity was obtained with the factorial analysis, the results show a percentage of the total explained variance of 60.30% and an Alpha reliability of 0.861, which demonstrates an adequate psychometric structure. An intentional snowball-type sample selection was made during the month of January 2022. A total of 125 participants were reached.

The instrument used also measures other constructs, for this document the results of the scale of use of technological networks are shown. This scale contains seven factors: Interpersonal relationships (Grinder, Tumblr, Snapchat, Tinder, LinkedIn, Telegram), meetings (Webinars, Google Meet, Zoom, email), video (WhatsApp, YouTube, alerts, reading electronic material), information (Facebook, Twitter, Messenger), leisure (Memes, TikTok, Pinterest), intensity (the intensity that I spend on my social networks and the frequency that I spend on my networks) and social networks (Instagram, online games, social networks).

3. Results

The data was subjected to descriptive statistics to obtain a complete panorama of the participants' responses, by question, in addition to parametric inferential statistics, Student's t-test for independent samples by factors and gender, ANOVA by academic degree and Pearson's r-correlation between the factors, through the IBM SPSS 24© program.

The results, regarding the frequency of the use of virtual networks, are led by WhatsApp (M=4.75, SD=0.60), followed by the use of email (M=4.20, SD=1.06), YouTube (M=4.05, SD= 1.04), Social Networks (M=3.99, SD=1.19), Instagram (M=3.86, SD=1.39), Facebook (M=3.61, SD=1.36), the alerts (M=3.58, SD=1.22), Zoom (M=3.43, SD=1.34), Electronic reading (M=3.30, SD=1.31), frequent use (M=3.26, SD=1.14), intensity of use (M=3.25, SD=1.17), Google meet (M=2.91, SD=1.45), Memes (M=2.77, SD=1.48), Messenger (M=2.71, SD=1.40), Webinars (M=2.51, SD=1.40), Games (M=2.41, SD= 1.48), TikTok (M=2.41, SD=1.48), Twitter (M=2.41, SD=1.45), LinkedIn (M=2.24, SD=1.35), Pinterest (M=2.23, SD=1.37), Telegram (M=2.23, SD=1.39), Snapchat (M=1.62, SD=1.06), Tumblr (M=1.48, SD=0.91), Tinder (M=1.44, SD=0.85), and finally Grindr (M=1.39, SD=0.85).

Table 1. Independent Samples t-Test Results.

Factor	Man		Woman		t	p
	M	SD	M	SD		
1. Interpersonal relationships	1.508	.553	1.651	.806	1.144	.255
2. Meetings	2.967	.930	3.290	.898	1.805	.075
3. Videos	3.967	.590	3.916	.649	-.426	.671
4. Information	2.745	1.102	2.716	.955	-.141	.888
5. Leisure	2.324	1.124	2.379	1.054	.255	.799
6. Time intensity	**3.657**	.839	**3.160**	1.018	-2.848	**.006***
7. Social networks	**3.807**	.957	**3.061**	.973	3.985	**.000****

Note: The mean and standard deviation values for men (n=38) and women (n=87) are shown, as well as the results of the t-test (equal variances are not assumed) for the comparison by sex.*p <. 05. **p <. 01.

The factors intensity of time and social networks show statistically significant differences between men and women. Therefore, equality is assumed in the use, by gender, of interpersonal networks, meetings, videos, information, and leisure (Table 1).

Table 2. Result of ANOVA.

Factor	Bachelor's		Master's		Doctorate		F	p
	M	SD	M	SD	M	SD		
1. Interpersonal relationships	1.57	.68	1.61	.72	1.60	.80	.151	.962
2. Meetings	**3.12**	.82	**3.60**	.91	**3.70**	.94	6.164	**.000****
3. Videos	3.83	.69	4.00	.48	4.05	.75	.686	.603
4. Information	2.54	1.08	2.89	.88	3.04	.96	1.513	.203
5. Leisure	**2.54**	1.08	**2.05**	.98	**1.78**	.84	3.327	**.013***
6. Time intensity	3.29	1.04	3.40	.93	3.10	.95	.245	.912
7. Social networks	3.26	1.05	3.11	.97	3.04	1.24	1.250	.293

Note: Mean and standard deviation values are shown for bachelor's (n=81), master's (n=29), and doctoral (n=15) students, as well as the results of the analysis of variance (ANOVA) for comparison by level. of studies.*p <. 05. **p <. 01.

Doctoral students spend more time in meetings than master's and bachelor's students in a progressive and significant way, in addition, it is inverse to the time they use for leisure. The factors associated with interpersonal relationships, videos, information, intensity, and social networks do not present differences (Table 2).

Table 3. Pearson's r correlation results.

Factors	M	SD	1	2	3	4	5	6	7
1. Interpersonal relationships	1.608	.739	1	.366**	.311**	.426**	.417**	.300**	.382**
2. Meetings	3.192	.916		1	.366**	.311**	.426**	.417**	.300**
3. Videos	3.932	.630			1	.495**	.360**	.106	.291**
4. Information	2.725	.998				1	.368**	.274**	.462**
5. Leisure	2.362	1.071					1	.166	.435**
6. Time intensity	3.312	.991						1	.297**
7. Social networks	3.288	1.024							1

Note: The average and standard deviation values by factor (n=125) are shown, as well as the results of the correlation between factors through Pearson's r test. *p <. 05. **p <. 01.

The factors are correlated with each other, in a significant way, which suggests cause effect from the results, only the intensity factor of time dedicated to virtual networks does not show significant correlation, with the factors of video and leisure (Table 3).

In addition, they were asked how connected you are with virtual networks? On a scale of zero to ten, resulting in a mean of 6.54 with a standard deviation of 2.34, they were also asked how satisfied your connection with virtual networks makes you feel virtual networks? Obtaining an average score of 6.51 and a standard deviation of 2.19, which translates into a conscious link and satisfaction for said link in 6.5 out of 10.

4. Discussion

There are differences by gender with respect to intensity and play. These results are consistent with the work of Fernández de la Iglesia, Casal, Fernández and Cebreiro (2020), where the use of networks is influenced by gender, for example, men use networks to participate in games, while women use them to socialize and to add photos and videos. In addition, men connect more frequently to participate in online games or enter gambling websites, while women neglect their study tasks more or get in a bad mood for not connecting.

The ANOVA statistic made it possible to compare the factors for undergraduate, master's and doctoral students, finding statistically significant differences, which show that the meetings are nodal, because according to Anguita, Iglesias García (2018) represents that university students are an "intoxicated population", which has the need to get involved in networks oriented to social agency, in a participatory, deliberative manner, to form social and cultural capital.

The relationship between the factors allowed to establish the link of cause and effect, so knowing the time they spend on virtual networks allows describing aspects of their interpersonal relationships, work, and leisure, also helps to outline an image of the psychosocial impact to virtual networks in university students in the Republic of Panama.

To conclude, the psychosocial impact of adhering to technology continues to grow, for the moment, the participants assume 65% of linkage with virtual networks, which minimizes the opportunity for person-to-person interaction, which although at this time of pandemic can be a protection measure, it is essential to provide permanent monitoring, so that it is possible to differentiate between proactive tools and pathological habits. In this scenario, it is possible to consider that university students require technological clinical assistance due to the amount of time they use virtual networks (Brenner, Alexander, Quirke, Eustace-Cook, Leroy, Berry, Healy, Doyle, & Masterson, 2021).

In any case, it is necessary to continue promoting access, management, evaluation, integration, communication and creation, in a safe, critical and responsible way through digital devices and network technologies, since the messages are loaded with emotions, especially news and advertising that emerge while university students use virtual networks, (Arce-García, Orviz-Martínez, & Cuervo-Carabel, 2020), what is recommended is to carry out more studies with the assisted diagnosis model to quantify mental disorders (MDAD), by Zhou, Hu, and Wang, (2019), in addition to monitoring their emotional health (Rodríguez & Garza, 2019).

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