Behind the Screen: Investigating Social Media Addiction and Stress as Explanatory Factors for Smartphone Distraction in Young Adults and Adults

Detrás de la pantalla: Investigando la Adicción a Redes Sociales y el Estrés como factores explicativos de la Distracción por Teléfonos Inteligentes en jóvenes y adultos

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Abstract

The purpose of this study is to evaluate the fit of the model that relates distraction by the use of smartphones with addiction to social networks and stress in young people and adults in the department of Tacna in the year 2024. The research adopts an experimental design and has a sample of 100 participants from Tacna, selected through non-probabilistic sampling. The results obtained reveal an X2/gl of 15.01, a CFI of 0.993, a TLI of 0.990, an RMSEA of 0.376, an SRMR of 0.053 and a PNFI of 0.767. In conclusion, it is evident that the adjustment model relating smartphone distraction with social network addiction and stress in young people does not reach adequate goodness-of-fit indices.

Keywords: Smart Phone, Cell Phone Use, Internet Addiction Disorder, psychological stress.

Resumen

El propósito de este estudio es evaluar el ajuste del modelo que relaciona la distracción por el uso de teléfonos inteligentes con la adicción a las redes sociales y el estrés en jóvenes y adultos del departamento de Tacna en el año 2024. La investigación adopta un diseño experimental y cuenta con una muestra de 100 participantes de Tacna, seleccionados mediante un muestreo no probabilístico. Los resultados obtenidos revelan un X2/gl de 15.01, un CFI de 0.993, un TLI de 0.990, un RMSEA de 0.376, un SRMR de 0.053 y un PNFI de 0.767. En conclusión, se evidencia que el modelo de ajuste que relaciona la distracción por teléfonos inteligentes con la adicción a las redes sociales y el estrés en jóvenes no alcanza índices adecuados de bondad de ajuste.

Palabras clave: Teléfono Inteligente, Uso del Teléfono Celular, Trastorno de Adicción a Internet, estrés psicológico.

INTRODUCTION

In the digital era, the increased use of smartphones (IT) has generated a substantial change in people's daily lives, giving rise to new forms of social interaction (Rotondi et al., 2017). These devices have brought significant benefits in terms of instant connectivity, access to information, and mobile entertainment (Shanmugasundaram & Tamilarasu, 2023). However, this technological progress has also presented considerable challenges. In social contexts, smartphones frequently serve as intermediaries in communication and collaboration, but they have also been identified as potential distracters in situations that demand concentration and attention (Gladden, 2018; Mantere, 2022). Another prominent aspect of IT use is the rapid accessibility of social networking platforms, generating a cycle of distraction that can affect both productivity and the quality of social interactions (Koessmeier & Büttner, 2021).

In this regard, Mascia et al. (2023) and Wilmer et al. (2017) note that smartphone distraction (SDD) involves the total absorption of the individual's attention on the device screen, either through browsing social networks, consuming multimedia content, or engaging in interactive applications. Furthermore, this behavior can be linked to social network addiction (SRA), which refers to a pattern of excessive and compulsive dependence on the use of social networking platforms (Zhao et al., 2022). It can influence people's mental health and behavior (Kuss & Griffiths, 2017). As a result, it has become a prominent topic in psychological research. The literature suggests that instant gratification, social acceptance, and the constant need for connection may contribute to the development of addictive patterns (Pellegrino et al., 2022).

On the other hand, stress manifests as a psychological and physiological burden in response to environmental demands. It can arise due to overexposure to information, pressure to stay connected, and social expectations. This phenomenon can cause both physical and mental alterations in people, increasing their susceptibility to adopt addictive behaviors when faced with stressful situations (Yang et al., 2021). Likewise, these pressures can lead people to seek refuge in their mobile devices as a form of escape and distraction (Kuss & Griffiths,

2017). Furthermore, the constant need to be connected can have negative consequences, as the perceived difficulty to disconnect can contribute to elevated levels of stress and anxiety, negatively affecting individuals' mental health. For this reason, the distraction generated by constant IT use has become a topic of interest for researchers and health professionals (Chu et al., 2021; Oraison et al., 2020).

By drawing on fundamental theories such as Perceptual Control Theory (Mansell et al., 2019) and Distraction Conflict Theory (Baron, 1986), it is argued that individuals may adjust their behavior based on changes in the environment or their internal conditions. Furthermore, the magnitude of the impact of a distraction will depend on several factors, such as the intensity of the distraction, the nature of the main task, and the individual's cognitive abilities. Therefore, the study aimed to develop an explanatory model that illustrates the interrelationships between smartphone distraction, social network addiction, and stress in young people and adults in the Department of Tacna. This is based on the need to understand and address the specific impacts of this technological reality.

METHOD

Research design

The current research adopts a non-experimental design since it does not involve the manipulation of variables in the study participants. In addition, it is characterized by its explanatory scope, which seeks to understand the underlying causes of the phenomenon under study and the conditions in which it manifests itself, as well as the relationship between two specific variables (Hernández et al., 2018).

Sample

The research sample included 100 individuals, encompassing both youth and adult residents in the city of Tacna. Of the total number of participants, 59 % were men and 41 % were women. In terms of age, this ranged from a minimum of 15 years to a maximum of 63 years, with an average age of 27.9 years.

Instruments

Smartphone Distraction Scale: This is an instrument of English origin designed by Throuvala, composed of 16 items evaluated using a Likert-type scale from 1 to 5. These items are distributed in four dimensions: impulsive attention, online vigilance, emotion regulation, and multitasking. Model fit analyses revealed that the four-factor model adequately fit the data χ^2 = 233.56, gl = 98; p <0.001; χ^2/gl = 2.38; RMSEA = 0.053; 90% CI (0.044, 0.061), CFI = 0.940; TLI = 0.927, SRMR = 0.044]. All factor loadings of the SDS proved to be statistically significant (p <0001), evidencing the relationship between the items and the underlying factor (Throuvala et al., 2021).

Social Network Addiction Scale (BMAS): The scale consists of 06 items assessed using a Likert scale ranging from 1 to 5. The unidimensional measurement model proposed for the original version of the BSMAS was validated for our adaptation (X^2 (9) = 23.9315, CFI = 0.994, TLI = 0.990, SRMR = 0.032, RMSEA = 0.061). Good reliability was observed (α = 0.863; 95 % CI: 0.848-0.870; Ω = 0.864; 95 % CI: 0.846-0.844) (Andreassen et al., 2016).

Self-perceived stress scale (PSS): The questionnaire, conceived by Cohen et al. (1983), provides a global assessment of the level of stress perceived during the last month, i.e., the extent to which various life situations are interpreted as stressful. It is composed of 10 statements, of which 1, 2, 3, 6, 9, and 10 are positive, while items 4, 5, 7 and 8 are negatively oriented. The scale is ordinal (0 = never, 1 = almost never, 2 = sometimes, 3 = frequently, 4 = very frequently), and the total score is obtained by inverting the positive items. The instrument presents favorable indicators of model fit (CFI: 0.990, TLI: 0.986, RMSEA: 0.036, and SRMR: 0.037), and optimal results were achieved in terms of internal consistency (α= 0.95) and omega (Ω= 0.96) (Remor, 2006).

Procedure

Data collection was performed through a virtual link through the Google Forms platform. The subjects involved were contacted through social networks, which were provided with a virtual link containing general information about the research and the selected instruments. All the instruments were self-administered and contained instructions necessary to complete the answers; in addition, the researchers placed an email to clarify any doubts about the instruments in the study.

Data analysis

Structural equation modeling (SEM) was used through JAMOVI software version 2.3.26. In the first phase, Mardia's coefficient was examined to assess multivariate normality, followed by consideration of the Unweighted Least Squares (ULS) estimator. The adequacy of the structural model was assessed by the x2/gl test, as well as by the approximate fit coefficients (CFI, TLI, RMSEA, RSMR). In addition, beta coefficients and regression coefficients were used to interpret the results.

RESULTS

Initially, the fundamental purpose consisted of evaluating the adjustment model of distraction caused by the use of smartphones, explained by addiction to social networks and stress in the youth and adult population of the Department of Tacna in the year 2024. The results obtained are presented below:

Explanatory Model

Table 1

Explanatory model of smartphone distraction based on social network addiction and stress.

Model	X²/gl	CFI	TLI	PNFI	RMSEA	SRMR	Estimator
Model 1	15.01	0.993	0.990	0.767	0.376	0.053	ULS
Model 2	4.783	0.996	0.995	0.809	0.195	0.060	ULS
Model 3	4.53	0.997	0.996	0.799	0.189	0.061	ULS

Note: X2: chi-square; gl: degrees of freedom; CFI: comparative fit index; TLI: Tucker-Lewis fit index; PNFI: Tucker-Lewis fit index; RMSEA: root mean square error of approximation; SRMR: standardized root mean square residual; Model 2-removing stress dimension; Model 3-removing stress dimensions; and Covariance DM1-DM2 (Distraction).

Table 1 presents the analysis of the proposed models. It should be noted that Model 1 (original) exhibits poor fit indicators, characterized by high values in X2/gl, RMSEA, and SRMR. In view of this situation, Model 2 is proposed, which eliminates the self-perceived stress dimension of the stress variable, retaining only the stress coping dimension with items 4, 5, 7, and 8. These items are integrated into the model together with smartphone distraction, grouped in its four dimensions, and social network addiction, which is unidimensional and composed of six items. This adjustment results in significant improvements in the indicators, with more favorable values in X2/gl (4.783), CFI (0.996), TLI (0.990), PNFI (0.809) and RMSEA (0.195). However, a third model is proposed, which yields even more satisfactory results, with improvements in X2/gl (4.53), CFI (0.997), TLI (0.996), PNFI (0.799), RMSEA (0.189), and SRMR (0.061).

Figure 1

Explanatory model of smartphone distraction based on social network addiction and stress.

Note: ADI=Social network addiction; EST= Stress as explanatory factors for DIS=distraction by smartphones.

Figure 2

Explanatory model 3 of smartphone distraction based on social network addiction and stress.

Note: ADI=Social network addiction; EST= Stress as explanatory factors for DIS=distraction by smartphones.

Explanatory Model

Table 2

Explanatory model of smartphone distraction based on social network addiction and stress.

Predicha	Predictor	β	z	p
DIS	ADI	0.892	20.16	<.001
DIS	EST	0.156	4.49	<.001

Note: ADI=Social network addiction; EST= Stress as explanatory factors for DIS=distraction by smartphones.

Table 2 shows a significant relationship between smartphone distraction and social network addiction, with a beta coefficient of 0.892 and a significant p-value (p<0.001). Likewise, an influence of stress on smartphone distraction is observed in young people and adults in the department of Tacna, indicated by a beta coefficient of 0.156 and a significant p-value (p<0.001).
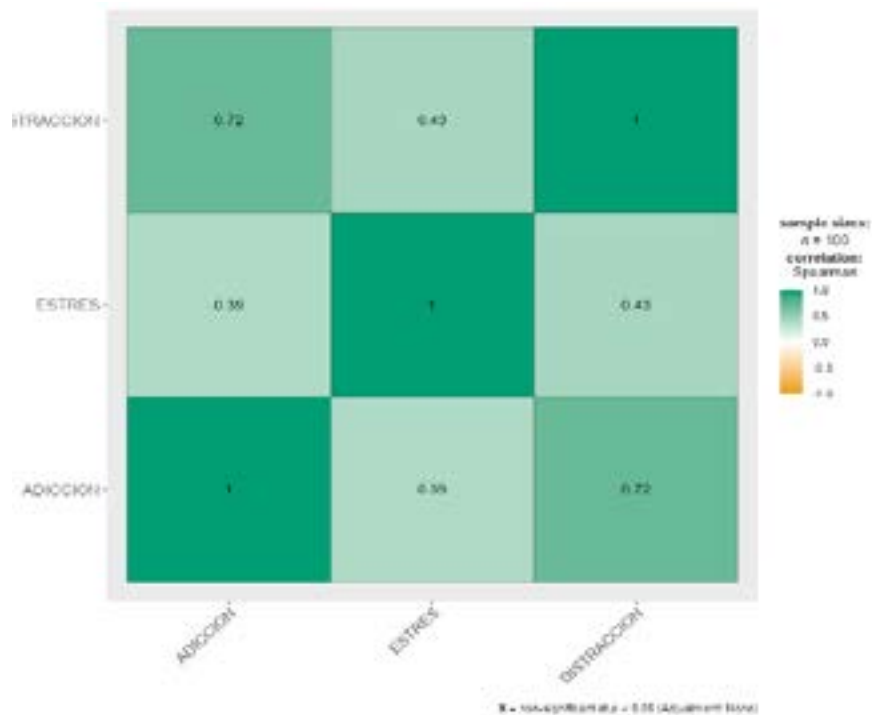
Relationship between variables

The normality of the variables was evaluated using the Shapiro-Wilk test, revealing that smartphone distraction does not exhibit normal distribution of the data, with a p-value below 0.05 (p: 0.005).

In Figure 3, the correlations between variables are shown using Spearman's test. A strong correlation is observed between smartphone distraction and social network addiction (rho value: 0.72; p <0.001). Similarly, a moderate correlation was found between smartphone distraction and stress (rho value:0.43; p-value: <0.001). In addition, a moderate correlation was found between social network addiction and stress (rho:0.39; p-value <0.001).

Figure 3

Correlation of smartphone distraction, social network addiction, and stress.

Relationship between variables and dimensions:

In Figure 4, significant correlations between smartphone distraction and stress, along with their corresponding dimensions, are appreciated, highlighting a moderate correlation (rho: 0.402) between smartphone distraction and the self-perceived stress dimension.

Figure 4

Correlation matrix between smartphone distraction and stress dimensions.

DISCUSSION

Table 1 showed that the original model, despite showing satisfactory values in terms of goodness-of-fit, had some deficiencies, as indicated by the results of X2/gl > 3.0 and RMSEA > 0.05. Therefore, the model was re-specified to improve the results. This revision involved removing the perceived stress dimension from the stress variable and covarying dimensions 1 and 2 of the smartphone distraction variable. These adjustments contributed to reducing the X2/gl value to 4.53 and the RMSEA to 0.189. Despite the novelty of the measurement instrument for smartphone distraction, there is still no empirical evidence to support the model's explanation. However, previous research suggests that distraction may manifest itself through constant monitoring of mobile devices, which facilitates the superficial processing of core tasks and may generate perceptual conflicts related to well-being and productivity among youth (Zhao et al., 2022).

As for the results of the regression analysis of model 3 in Table 2, the link between the predictor variable "ADI" (Addiction to social networks) and the criterion variable "DIS" (Distraction by smartphones) was examined. The parameter estimates β (0.892) with a p-value < 0.001 indicate a significant and positive regression between ADI and DIS. However, the variables "DIS" (Distraction by smartphones) and "EST" (Stress) showed a standardized coefficient β (0.156) small and a p-value < 0.001, suggesting weak regression. The limited evidence available on the regression between the variables involved makes it difficult to compare with the results of this study. Furthermore, previous research suggests that interaction with environmental or personal stimuli may influence the performance of different behaviors with a common function, such as the avoidance of stressful events or the pursuit of pleasure and social acceptance (Kuss & Griffiths, 2017).

Finally, Figures 3 and 4 show the relationships between the variables of smartphone distraction (DIS), social network addiction (ADI), and stress (EST) and their respective dimensions. A strong and positive correlation was found between DIS and ADI, as well as a weak and positive correlation between DIS and EST. Furthermore, within the stress dimensions, only coping showed a weak and positive correlation with DIS. These findings are consistent with previous studies, such as that of Throuvala et al. (2021), which found significant correlations between ADI and DIS, as well as between EST and DIS. It is important to note that, despite meeting randomization criteria, the sample size was limited, which could have influenced the results obtained. In addition, the data did not follow a multivariate normal distribution. Although the most appropriate estimator for the case was used, overestimated goodness-of-fit values were observed in the original model.

CONCLUSIONS

The initial model proposed to explain the distraction caused by the excessive use of smartphones, based on social network addiction and stress, was not significant. However, when adjustments were made, and one of the stress dimensions was eliminated, significant values of less than 0.05 and adequate results in terms of goodness of fit were obtained.

The increasing distraction generated by the excessive use of cell phones, driven by both social network addiction and stress, represents a significant challenge in the Department of Tacna. To effectively address this issue, it is necessary to adopt a comprehensive approach that includes raising awareness, educating people, and developing coping skills. By fostering a healthy balance between digital connectivity and daily responsibilities, it is feasible to mitigate the negative effects of distraction and contribute to improving the quality of life of individuals in the region.

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ROLE OF AUTHORS

DMCC: analysis of statistical results and interpretation.

JAVA: analysis of statistical results and interpretation.

EJAM: collected and processed the data

VLHH: writing, interpretation of results and correction.

ETHICAL ASPECTS

The authors claim to have rigorously followed the guidelines established by the ethical standards governing professional practice, such as the Code of Ethics of the Peruvian College of Nurses and the Code of Ethics of the Peruvian Dental College. The confidentiality of the study participants was guaranteed, ensuring the anonymity and privacy of the persons involved.

CONFLICT OF INTEREST

The authors declare under oath that they have no conflict of interest in carrying out this article.lo.

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