RCYS
REVISTA DE COMUNICACIÓN Y SALUD

ADDICTION TO SOCIAL MEDIA TIKTOK IN COLOMBIAN UNIVERSITY STUDENTS

Adicción a la red social TikTok en jóvenes universitarios colombianos

Carlos Andrés Trejos-Gil[1]:
Luis Amigó Catholic University. Colombia.
carlos.trejosgi@amigo.edu.co

Carla Cristina Tordecilla-Pájaro:
Luis Amigó Catholic University. Colombia.
carla.tordecillapa@amigo.edu.co

Daniela Mena Mena:
Luis Amigó Catholic University. Colombia.
daniela.mename@amigo.edu.co

How to reference this article:

Abstract

Introduction: The use of social networks has become one of the most influential but challenging phenomena for the social and health system due to COVID 19, a pandemic virus that affected the world and threatened humanity. During this stage there was evidence of an increase in the use of social media networks, where TikTok is part, one of the most famous, as it has in its users billions of followers worldwide, being young people the group most at risk of the threats that it brings because they are curious people and those who connect to the Internet through different devices and uses them for more time than the rest of the population. **Methodology:** he goal is to validate a scale that measures TikTok addiction correlated with symptoms of anxiety or depression. A quantitative study of a correlative type with the main technique was performed, the exploratory

---

[1] **Carlos Andrés Trejos Gil**: PhD(c) Interdisciplinary Studies in Psychology; International Master in Strategic Management; Master in Business Administration and Management (MBA). Specialist in Senior Management. Publicist. Administrative Engineer.

factor analysis with reliability (α = 0,887) to a population sample of 381 university students from the city of Medellín. **Results:** The results show that the scale was constructed by 33 items in 6 factors with factor loads greater than 0.40 with accumulated variance of 52.75% the variables are related to each other (p = 0.000) and (KMO = 0.84), **Discussion:** Component 1, called anxiety, connection and TikTok, is the one that explains the most with 11.17% of the analyzed phenomenon; this finding confirms our hypothesis and coincides with what was found in most of the works studied in this research. **Conclusions:** It is concluded that the instrument is reliable, valid and optimal to measure addiction to TikTok during confinement due to anxiety and depression disorders in university youth and adolescents.

Keywords: social media, addiction, pandemics, mental health, social isolation.

Resumen

Introducción: El uso de las redes sociales se ha transformado en uno de los fenómenos más influyentes pero desafiantes para el sistema sociosanitario debido al COVID 19, un virus pandémico que afectó al mundo y tuvo en jaque a la humanidad. Durante esta etapa se evidenció un incremento del uso de redes sociales, donde hace parte TikTok, una de las más famosas, ya que tiene en sus usuarios a miles de millones de seguidores en todo el mundo, siendo los jóvenes el grupo de mayor riesgo a las amenazas que trae consigo a causa de que son personas curiosas y las que más se conectan a Internet a través de distintos dispositivos y usos por mayor cantidad de tiempo que el resto de la población. **Metodología:** El objetivo es validar una escala que mida la adicción a TikTok correlacionada con los síntomas de ansiedad o depresión. Se realizó un estudio cuantitativo de tipo correlacional con técnica principal el análisis factorial exploratorio con fiabilidad (α = 0,887) a una muestra poblacional de 381 estudiantes universitarios de la ciudad de Medellín. **Resultados:** Los resultados evidencian que la escala quedó construida por 33 ítems en 6 factores con cargas factoriales superiores a 0,40 con varianza acumulada del 52,75% las variables están relacionadas entre sí (*p* = 0,000) y (KMO = 0,84). **Discusión:** el componente 1 denominado ansiedad, conexión y TikTok es el que más explica con 11,17% el fenómeno analizado, este descubrimiento confirma nuestra hipótesis y coincide con lo encontrado en la mayoría de trabajos estudiados en esta investigación. **Conclusiones:** Se concluye que el instrumento es fiable, válido y óptimo para medir la adicción a TikTok durante el confinamiento por trastornos de ansiedad y depresión en los jóvenes y adolescente universitarios.

Palabras clave: redes sociales, adicción, pandemia, salud mental, aislamiento social.

1. INTRODUCTION

The Internet emerged in 1969 when the U.S. Department of Defense developed ARPANET (Advanced Research Projects Agency Network) (Arab and Díaz, 2015; Sevilla, 2018). This invention led to the widespread use of computers, the advent of the World Wide Web, email, social networks, and the iPod, which drove the development of smartphones with various applications on a global scale (Caro, 2017; López, 2006; Romero and Rivera, 2019).

Smartphones have become a necessity for humans, leading to their massive and routine use (Aranda et al., 2017; Baraybar et al., 2021; Herrero et al., 2019; McLuhan, 1996; Schwartz and Settimi, 2008). However, not all aspects of these devices are related to educational or work-related purposes, as entertainment is a significant part of their multiple uses (Munayco et al., 2020; Viñals, 2013). This versatility and functionality make smartphones one of the most impactful technologies on daily life and social relationships, encompassing a wide range of digital environments for today's youth (Aranda et al., 2017; Dabós, 2015; Herrero et al., 2019; Zapata et al., 2018).

2

Part of these digital environments includes social networks, which have experienced significant growth over the years and have become the epicenter of people's lives, providing easy access to various platforms (Arab and Díaz, 2015; Labuena, 2021; Ramos et al., 2017). In Colombia, a country with approximately 51.96 million inhabitants, around 74.0% of the population is connected to social networks (We are social and Meltwater, 2023), with Facebook being the most popular social network and TikTok ranking fourth in usage among Colombians, with a 67.9% usage rate for 2023 (Data reportal, 2022; Statista Research Department, 2023; We are social and Meltwater, 2023). Furthermore, according to the We are social and Meltwater report, the population aged 18 to 24 represents the second most connected group after those aged 25 to 34 (2023). Colombia ranks as the fourth country in the world for daily Internet usage (average of 09:13 hours), and it holds the fifth place in social media usage (average of 03:35 hours), with females (♀) averaging 03:10 hours and males (♂) averaging 02:39 hours, specifically among the age group of 16 to 24 years. In relation to its population, 77.9% of Colombians are active users on social networks, with TikTok having 20.11 million adult Colombian users (♀= 59.8%) and (♂= 40.2%) (We Are Social and Hootsuite, 2022; We Are Social and Meltwater, 2023).

On the other hand, the use of social media has become one of the most influential yet challenging phenomena for the socio-health system due to COVID-19 (Baraybar et al., 2021; Labuena, 2021; Ochoa and Barragán, 2022), a pandemic virus that affected the world and put humanity to the test in the year 2020 (Domínguez and Amador-Bedolla, 2020), resulting in the so-called social isolation or lockdown (Ministry of Health and Social Protection of Colombia, 2020).

Lockdown involves isolating the community in their homes to prevent and control mass contagion of COVID-19 (Ministry of Health and Social Protection of Colombia, 2020; Ramos, 2020). During this period, there was a noticeable increase in the use of social media (Gupta et al., 2021; Ochoa and Barragán, 2022; Olivares et al., 2020). These digital tools create a conducive space for constant interaction among people (Cabero et al., 2020b; Ochoa and Barragán, 2022; Valdéz, 2019). However, this new virtual reality is characterized by individuals' capacity on social media to collectively and individually construct or create an identity, whether genuine or false (Cascardo and Veiga, 2020; Echebur and Sebasti, 2010; Gupta et al., 2021), and by social transformations that bring a series of repercussions leading to negative behavioral consequences, such as abnormal usage of these platforms (García et al., 2014; Herrero et al., 2019; Valdéz, 2019; Vázquez et al., 2019).

It's important to note that TikTok is one of the most widely used social media platforms today, with over a billion users worldwide (Espinoza et al., 2021; Boffone, 2022). TikTok is a horizontally-oriented social network, meaning a network where you can consume and share all kinds of content (Ramón and Segovia, 2016; Trejos-Gil, 2020), such as music videos, comedy, advertising, and more (Bermejo, 2021; Boffone, 2022; Griffiths, 2023; Olivares et al., 2020). This platform satisfies users' need for self-expression, fulfillment, interaction, and above all, escapism from reality (Arab and Díaz, 2015; Gupta et al., 2021). In December 2020 alone, around 56 million new TikTok app downloads were recorded (Labuena, 2021), and by early 2022, it became the fifth most downloaded application (We are social, 2022). In 2021, out of 631 million registered users, 11.3% were under 13 years old (Labuena, 2021), making it a platform with a significant teenage presence (Gupta et al., 2021). Additionally, 41% of TikTok's audience falls within the 16 to 22 age group, making it the most common age group (Espinoza et al., 2021). In Colombia, at least 27% of the population uses TikTok (We are social and Meltwater, 2023).

Adolescents, individuals aged 12 to 18, and young adults, individuals aged 18 to 25 (BVSColombia, 2019; Colombian Congress, 2006; Ministry of Health, 2022), constitute the group at the highest risk for threats posed by social media, as they are curious individuals who connect to the Internet more frequently through various devices and for longer periods compared to the rest of the population (Ballesta-Pagán et al., 2015; Cascardo and Veiga, 2020; García et al., 2014; Valdéz, 2019).

But what threats can the use of these platforms bring? Each day, young people spend more time on social media compared to any other activity, eventually leading to addiction, as constant exposure or contact with these technologies makes them more prone to develop negative patterns that could impact behavior and emotions (Costa et al., 2021; Critikián and Núñez, 2021; Echebur and Sebasti, 2010; Herrero et al., 2019; Martín and Medina, 2021; Munayco et al., 2020; Valdéz, 2019).

It's worth noting that addiction is a term associated with dependency, where the individual engages in an activity repetitively (Martín and Medina, 2021; Robles, 2015; Valdéz, 2019). It's considered a condition of lacking control to stop, regardless of the harm this behavior could cause (Arab and Díaz, 2015; Méndez et al., 2017). People suffering from addiction often don't recognize that they are addicted, and the same goes for those struggling with cyber addiction (Critikián and Núñez, 2021; Echebur and Sebasti, 2010; Young, 1996).

The term cyber addiction or cyber dependence has been debated for several years and refers to dependency on cyber aspects like the Internet and social media (Arab and Díaz, 2015; Echebur and Sebasti, 2010; Valdéz, 2019). A tech addict can experience similar sensations to those of a substance addict, such as withdrawal when consumption is interrupted (Cabero et al., 2020b; Caro, 2017; Critikián and Núñez, 2021; Echebur and Sebasti, 2010; Sotero et al., 2019; Valdéz, 2019); however, they differ in terms of their impact on cognitive processes. While substance addiction affects neural functions, cyber addiction alters the need to successfully process all the information contained in these media (Caro, 2017; Herrero et al., 2019; Méndez et al., 2017; Schwartz and Settimi, 2008). Some of the analyzed studies have focused on evaluating addictive behavior using different instruments, but the most common one is the Social Media Addiction Scale by Sahin (2018) (SMA-SF), adapted by Cabero et al. (2020a).

What's clear is that there's now a need to always stay connected, which has been increasing over time, making it more difficult to achieve the same level of satisfaction as initially experienced (Echebur and Sebasti, 2010). This sensation is often described as a slot machine effect, rooted in the theory of uses and gratifications (Katz, 1959). In the case of TikTok, addiction is stimulated by the act of updating through scrolling down or infinite scrolling, inviting users to receive a random reward every time they swipe down the feed via touch (Aranda et al., 2017; Costa et al., 2021).

It's important to add that in the case of dependence, addictive behaviors become automatic, emotionally activated, and with little control. Therefore, TikTok abuse can lead to poor academic performance, disinterest, behavioral disorders, isolation, and these are indeed warning signs indicating cyber dependence and even cases of suicide (Echebur and Sebasti, 2010; Llano-Castaño and López, 2022; Méndez et al., 2017; Ramos et al., 2017; Sotero et al., 2019). Certain personality traits or emotional states also increase psychological vulnerability to cyber addiction, such as impulsivity, dysphoria, intolerance to unpleasant stimuli, both physical and psychological, like distress, worries, responsibilities, and suicidal thoughts (Albino, 2020; Llano-Castaño and López, 2022; Méndez et al., 2017; Ortiz et al., 2013; Valdéz, 2019). In fact, studies associate cyber addiction in adolescents who feel lonely, have a need for social adaptation, and suffer from anxiety and depression—conditions that increased during the COVID-19 lockdown and could lead to

suicidal thoughts, prompting online psychological therapies (Amador-Sánchez et al., 2021; Grácia et al., 2020; Gupta et al., 2021; Herrero et al., 2019; Llano-Castaño and López, 2022; Martín and Medina, 2021; Nadal, 2020; Trejos-Gil et al., 2020). Various studies link the Hospital Anxiety and Depression Scale (HADS) (Diaz et al., 2018; Zigmond and Snaith, 1983).

It is necessary to remember that this phenomenon has been studied since 1996 when Young, a psychologist and expert in Internet addiction and online behavior disorders, published the first research. Over the years, opponents have also emerged associating this behavior as an adaptive response arising from rapid digitization (Caro, 2017; Herrero et al., 2019). This trend experienced a surge during the pandemic since many activities that were traditionally carried out in-person began to shift to the virtual realm due to confinement (Costa et al., 2021; Ochoa and Barragán, 2022).

However, those working on the development of these social networks acknowledge the addiction potential of these platforms. For instance, in TikTok, if a user wishes to close their account, the platform will ask for the reasons for closure, and one of the options presented is "addiction". Similarly, for users who wish to remain active, the app offers a feature called "Digital Detox", which includes: a graph that measures the user's weekly time spent on TikTok, a daily screen time limit tool that allows users to set usage limits ranging from 40 to 120 minutes. Once the time limit is reached, the app sends a notification, and if the user wants to continue using TikTok after that, a passcode must be entered. Screen time breaks, which activate a reminder to take a break from the app after an uninterrupted period of screen time. Finally, the Restricted Mode helps prevent inappropriate content. Furthermore, the tool also provides the option to control social media usage time from the notification tray.

The current study aims to validate a scale that measures TikTok addiction correlated with anxiety or depression symptoms in young university students. To test this, the following hypothesis is proposed: if TikTok addiction increased during the COVID-19 lockdown, then this fact is directly related to the rise of mental disorders such as depression and anxiety among adolescent and young university students (Nadal, 2020).

2. METHODOLOGY

This study was conducted with a quantitative approach, utilizing references that enabled an in-depth understanding of TikTok addiction and social media measurement (Trejos-Gil et al., 2020; Trejos-Gil, 2020). The tool used to verify the hypothesis was reliability statistics and exploratory factor analysis. This analysis was carried out on a sample representing university students in the city of Medellín (n=381), examining the correlation between increased social media addiction and the emergence of depression and anxiety symptoms.

2.1. Population

The population consisted of (N=666) university students residing in the city of Medellín, with ages ranging from 15 to 52 years. However, a sample (n=381) was selected (Table 1) where participants were aged between 15 and 27 years, categorized as young adults and adolescents of Generation Z (born after 1995) (Álvarez-Ramos et al., 2019; Fernández, 2021; García-Rivero et al., 2022; Santana et al., 2014). The sample reported not having Anxiety or Depression disorders.

Table 1. *Population sample (n= 381).*

Sex	Frequency	%	Age	Frequency	%
Female	292	76,6	15 - 18	42	11,0
Male	89	23,4	19 - 22	227	59,6
			23 - en adelante	112	29,4
Total	381	100		381	100

Source: *Own elaboration.*

2.2. Instrument

The instruments used to test the hypothesis are as follows: 1) the Sahin Social Media Addiction Scale (SMA-SF) adapted by Cabero et al. (2020b) from Sahin (2018). It consists of 28 Likert-type items with five response options ranging from "strongly agree" to "strongly disagree". Its selection is justified by its theoretical foundation and reliability, with a Cronbach's Alpha (α) of 0.95. This instrument was adapted to measure addiction to the TikTok social network.

Table 2. *Instrumentos de medición.*

Instrument	Author	Year	Ítems	α	Likert	Allocation
Social Media Addiction Scale (SMA-SF)	Sahin	2018	28	0,95	Strongly disagree	1
	Cabero et al.	2020a			Disagree	2
					Neither agree nor disagree	3
					Agree	4
					Totally agree	5
Hospital Anxiety and Depression Scale (HADS)	Zigmond y Snaith	1983	7 (anxiety)	0,88	Strongly disagree	1
			7 (depression)		Disagree	2
					Neither agree nor disagree	3
					Agree	4
					Totally agree	5
Total			42			

Source: *Own elaboration.*

The Hospital Anxiety and Depression Scale (HADS), developed by Zigmond and Snaith (1983), comprises 14 items organized into two 7-item subscales. Odd-numbered items assess depression and even-numbered items assess anxiety. Response options are Likert-type, ranging from 1 to 5, with a minimum score of 1 and a maximum of 35. Its selection is based on its ease of understanding, theoretical foundation, and reliability, with a Cronbach's Alpha (α) of 0.88.

2.3. Procedure

A Google Forms questionnaire was created containing the aforementioned scales. The form was distributed via networking with educators from different universities in the city of Medellín, who facilitated sending the form to institutional emails and allowed access to classrooms for students to complete the survey within approximately 20 minutes. This data collection process took place between July and September 2022.

The collected data were downloaded to an Excel spreadsheet and underwent appropriate cleaning. Numeric values were assigned to the five response options of SMA-SF (Sahin, 2018; Cabero et al., 2020a) and HADS (Zigmond and Snaith, 1983):

Of the total 666 students who participated in the survey, 211 were eliminated due to having missing data above 10%, not being committed to completing the questionnaire (responding "somewhat disagree" or "neither agree nor disagree" to all Likert Scale items), and 72 cases of university students aged above 27 were excluded.

2.4. Statistical Analysis

To verify the reliability of the sample, Gaskin's formula (2016) was used, indicating that a reliable population sample should have at least 3 people per item. To achieve the study's objective, each item of the scales used was analysed using the SPSS v25 statistical software.

Considering that the instruments consist of a total of 73 numeric variables, along with the addition of one dichotomous variable (gender) and one discrete variable (age), these two numeric segments were analysed separately, undergoing various analyses. The numeric variables segment representing the Hospital Anxiety and Depression Scale (HADS) and the Social Media Addiction Scale (SMA-SF) were subjected to internal reliability analysis (George and Mallery, 2003; Hernández et al., 1991) using the Cronbach's Alpha (α) statistic, with composite reliability coefficients of .70 or higher, as suggested by Gefen and Straub (2005). Measures of central tendency (M) and dispersion (DT) were calculated.

The primary technique used was exploratory factor analysis under the principal component extraction method. This technique was selected due to its ability to summarize a large volume of information, enabling the identification of the most significant dimensions for the study and avoiding subjective considerations.

The adequacy of the correlation matrix was initially verified, followed by the exploration of factorization through multivariate technique and normalization using the Kaiser-Mayer-Olkin (KMO) test to assess data suitability. A component extraction was carried out using Varimax rotation (Guisande et al., 2011). Variables that did not group together were subsequently removed (Hair et al., 2004; Pérez, 2004). In this manner, the KMO was improved, and the Factor Analysis technique was applied once again to the remaining variables.

3. RESULTS

The initial outcomes correspond to the 71 numeric variables, 1 dichotomous (gender), and another discrete (age), which were subjected to descriptive statistics and measures of central tendency. These statistics allow for the analysis of the frequencies of each variable and their different distributions (DT), averages (M), skewness (A), and kurtosis (K) (Table 3).

Table 3 displays the descriptive results, with items labelled as B corresponding to the Social Media Addiction Scale, and items labelled as C corresponding to the Hospital Anxiety and Depression Scale.

According to the results, the overall average value is (Mt=2.54) on a range of 1 to 4. The following values were obtained: the gender variable (M=1.23) indicates a higher participation of females in the sample, accounting for 76.6%. The age variable (M=2.18) indicates that the predominant age range was 19 to 22 years, constituting 59.6%. The highest average was for item B39 (M=4.05), revealing that most participants enjoy using TikTok to stay informed about trends. In terms of variance, high deviations are presented, with a range of DT=0.424 to SD=1.380 in the gender and

B19 items (view social media as an escape from the real world) respectively, indicating high data variability.

Table 3. *Descriptive statistics - numerical, dichotomous and discrete variables.*

Items	M	DT	A	K
1_ Sexo	1,23	,424	1,264	-,404
2_Edad	2,18	,609	-,119	-,457
3_B16	2,36	1,186	,301	-1,132
4_B17	2,72	1,366	,093	-1,381
5_B18	3,59	1,267	-,773	-,431
6_B19	2,28	1,380	,586	-1,062
7_B20	1,69	,990	1,287	,752
8_B21	1,74	,978	1,224	,678
9_B22	1,37	,748	2,281	5,167
10_B23	2,01	1,211	,888	-,428
11_B24	*1,84*	*1,176*	*1,261*	,539
12_B25	2,05	1,189	,758	-,701
13_B26	1,61	1,001	1,573	1,466
14_B27	3,10	1,352	-,311	-1,156
15_B28	1,62	,975	1,478	1,174
16_B29	2,44	1,192	,233	-1,036
17_B30	1,97	1,173	,982	-,257
18_B31	1,66	,989	1,427	1,300
19_B32	2,77	1,137	-,158	-,835
20_B33	1,55	,924	1,631	1,699
21_B34	2,37	1,226	,333	-1,067
22_B35	1,40	,866	2,386	5,130
23_B36	2,34	1,378	,576	-1,071
24_B37	1,55	1,001	1,862	2,493
25_B38	2,35	1,338	,520	-1,024
26_B39	4,05	1,070	-1,338	1,370
27_B40	3,50	1,187	-,741	-,271
28_B41	2,75	1,297	-,001	-1,231
29_B42	3,32	1,255	-,489	-,758
30_B43	***3,07***	***1,276***	-,281	***-1,045***
32_C45	3,87	1,183	-,936	-,064
35_C48	2,93	,992	,002	-,197
38_C51	2,61	1,161	,381	-,655
39_C52	2,19	1,026	,598	-,339
40_C53	2,10	1,303	,749	-,749
41_C54	2,80	1,346	,098	-1,191
43_C56	1,91	1,022	,997	,231

Source: *Own elaboration.*

In order to reduce error margins and enhance the reliability and validity of the HADS instrument, 7 out of 14 items were eliminated—5 related to depression and 2 to anxiety. These items were: Depression: C45 "Do I still enjoy the things I used to enjoy?", C47 "Can I laugh and see the funny side of things?", C49 "Do I feel cheerful?", C55 "Do I look forward to things?", C57 "Can I enjoy a good book or radio/television program?" Anxiety: C46 "Do I commonly have a sort of fear as if something terrible is going to happen?", C50 "Can I sit comfortably and feel relaxed?"

The Cronbach's Alpha coefficient indicating reliability was initially negative (-0.32), as the population theory differed from this study (Diaz et al., 2018). After the modification, it yielded an acceptable reliability level of (α=0.75), categorizing the instrument as reliable according to the criteria of George and Mallery (2003); Gefen and Straub (2005); and Hernández et al. (1991). The final result, across the 33 elements, indicated a high level of reliability with (α=0.887).

Upon applying the multivariate technique of principal component analysis (Guisande et al., 2011) to determine the level of correlation between variables, 6 components were derived, explaining 52.75% of the phenomenon. Component 1, labelled anxiety, connection, and social media, explained the most with 11.17%, representing the majority of information (Table 4).

Table 4. *Rotated Component Matrix - Varimax Rotation.*

Factors	Reactivos	ACTT	RTT	SN	PDI	ITT	ADTT		α
Anxiety and TikTok connection	B32	0,648							,882
	B16	0,636							,881
	B27	0,616							,882
	B17	0,615							,883
	B18	0,588							,885
	B29	0,566							,882
	B20	0,509							,882
	B21	0,48							,882
Relationship and TikTok	B22		0,704						,884
	B28		0,692						,883
	B25		0,677						,882
	B23		0,664						,883
	B19		0,479						,880
Negative feelings	C52			0,768					,886
	C48			0,761					,886
	C56			0,758					,884
	C44			0,642					,883
	C54			0,603					,888
Productivity, carelessness and unhappiness	B30				0,688				,881
	B33				0,677				,882
	B36				0,659				,883
	B37				0,566				,884
	B35				0,566				,883
	B31				0,548				,883
Information and TikTok	B40					0,773			,883
	B42					0,718			,886
	B39					0,658			,885
	B43					0,637			,884
	B41					0,622			,885
Appearance, depression and TikTok	C53						0,665		,889
	C51						0,515		,887
	B38						-0,465		,885
	B24						-0,464		,885
Alpha		,810	,755	,772	,765	,766	,211		,887
Eigenvalue		3,689	3,336	3,057	3,035	2,789	1,502		
% Variance		11,179	10,111	9,264	9,198	8,451	4,553		
Kaiser - Meyer - Olkin sampling adequacy									0,845
Bartlett's test of sphericity							X²		4597,104
							gl		0,528
							Sig.		0,000

X² = chi-squared   gl= degrees of freedom   Sig= significance

Source: *Own elaboration.*

To assess the joint relationship between variables, a Kaiser-Meyer Olkin (KMO) test of adequacy was conducted, yielding a result of (0.84). According to Kaiser's criterion (1970), this value indicates that the variables are closely related (Table 4).

As observed in Table 4, the determinant of the correlation matrix significance value is 0, suggesting a very high degree of intercorrelation among variables. This conclusion is supported by the significance associated with the Bartlett's test of sphericity, which is 0.000, enabling the rejection of the null hypothesis of non-correlation between variables.

4. DISCUSSION

The main objective of the research was to verify whether TikTok is truly an addictive platform and whether it is directly related to the generation of depression and anxiety symptoms in young adults and adolescents during the COVID-19 pandemic. To start, it's important to note that the obtained results confirm previous studies indicating that the most common population on TikTok falls within the age range of 16 to 22 years (Espinoza et al., 2021).

On another note, the use of social media, especially TikTok, experienced an increase during the COVID-19 confinement period (Gupta et al., 2021; Ochoa and Barragán, 2022; Olivares et al., 2020). This is corroborated by studies like We are Social (2022), which counted the number of TikTok downloads during the lockdown, and authors like Labuena (2021), who affirm that the social media platform became one of the most popular and downloaded due to the lockdown. By 2022, it was already the fifth most downloaded application with 631 million registered users. However, authors like Caro (2017) argue that it is an adaptive behavior, a theory that makes sense considering the rapid digitalization during that time, where activities that were previously conducted in person, such as education, shifted online. This aligns with findings from one of the survey items where 52% of the sample affirmed that they used social media or TikTok to stay informed about their courses most of the time or all the time.

As mentioned in the results, Component 1, labelled anxiety, connection and TikTok, explains the phenomenon the most, accounting for 11.17% of the variance. This discovery validates our hypothesis and aligns with findings in many works, such as Grácia et al. (2020); Gupta et al. (2021); and Herrero et al. (2019), who mention that individuals who experience cyber addiction often feel lonely, have a need for social adaptation, and suffer from anxiety or depression.

In the context of depression and TikTok, the results showed a similarity between neglecting physical appearance and the desire to portray a false identity on the social media platform. This suggests that those suffering from this depression symptom tend to create a fake identity on social media, particularly the platform examined in this study. Works like Albino (2020); Cascardo and Veiga (2020); Echebur and Sebasti (2010); Gupta et al. (2021); Olivares et al. (2020); Ortiz et al. (2013); and Valdéz (2019) highlight these previously mentioned results, discussing dysphoria as an emotional state that somehow increases psychological vulnerability to cyber addiction.

In cases of dependence, addictive behaviours become automatic, emotionally charged, and difficult to control. Authors like Echebur and Sebasti (2010); Méndez et al. (2017); Ramos et al. (2017); and Sotero et al. (2019) mention that TikTok abuse can lead to academic underperformance, disinterest, behavioural disorders, and isolation. This relates to results associating productivity, neglect, and unhappiness, as they demonstrated that people who neglect their tasks for TikTok usage tend to forget about hunger or thirst, neglect their family members, and feel unhappy when not using the platform.

These results are not unexpected, as there is an accumulated empirical evidence. When some of the research subjects discovered that the analyzed social media platform was TikTok during networking, many expressed that they felt dependent on it. When asked whether they felt hungry

10

or thirsty while using TikTok or whether they felt time passed quickly, their responses were often affirmative. Additionally, many refused to know the actual time spent on TikTok, which aligns with Echebur and Sebasti (2010) and Young (1996), who discuss denial of addiction.

5. CONCLUSIONS

In conclusion, the Social Media Addiction Scale, both overall and by factors, provides evidence of reliability and validity with a Cronbach's alpha of (α=0.9). On the other hand, the Hospital Anxiety and Depression Scale demonstrates reliability evidence due to internal modifications, indicating an adapted version to the sample of this study, with a Cronbach's alpha of (α=0.887) (George and Mallery, 2003; Hernández et al., 1991).

Another noteworthy result of this study is that the phenomenon is explained by 52% of the analyzed components. The first factor, anxiety, connection, and TikTok, explains the most with 11.17%. Furthermore, based on the intervention performed, it can be deduced that the objective has been met, confirming TikTok as an addictive platform. It's also confirmed that its usage increased during the COVID-19 lockdown. This conclusion is also drawn from the fact that individuals who neglect their tasks for TikTok usage are those who tend to neglect spending time with their family and friends, and furthermore, they don't feel hungry or thirsty while using this platform. Additionally, TikTok developers have acknowledged addiction by creating a panel named "Digital Detox," a function that, by the time of writing this article, no longer exists with that name.

Other conclusions that can be drawn from the results include a higher participation of females compared to males, and the most popular age range being between 19 and 22 years. To wrap up, our hypothesis was confirmed, as the results exhibited a similarity between individuals with anxiety and depression symptoms and addiction to TikTok. This connection can be confirmed by the fact that those who tend to neglect their appearance are more prone to developing a TikTok addiction due to psychological vulnerability.

Finally, it's suggested that for future studies, the instrument should be applied with the developed factors in other population and cultural samples, as the Anxiety and Depression Scale (Zigmond and Snaith, 1983) was originally applied to different types of individuals with distinct characteristics. One limitation of the study is the applicability of the instrument to university students from only one institution. Therefore, it's proposed that future studies expand the geographical and institutional range to include not only private but also public institutions.

6. REFERENCES

Albino, M. (2020). *Estado del arte sobre los riesgos y la prevención en el uso de Internet en niños y adolescentes* [Tesis pregado, Universidad Pontificia Javeriana]. Respositorio Institucional Javeriano. https://bit.ly/3bISVTq

Álvarez-Ramos, E., Heredia-Ponce, H. y Romero-Oliva, M. (2019). La Generación Z y las Redes Sociales. Una visión desde los adolescentes en España. *Revista Espacios*, *40*(20)1-13.

Amador-Sánchez, O. A., Trejos-Gil, C. A., Castro-Escobar, H. Y. y Angulo, E. J. (2021). Psicoterapia online en tiempos de pandemia: Intervención cognitivo-conductual en pacientes colombianos con depresión. *Revista De Ciencias Sociales*, *27*(4) 49-60. https://doi.org/10.31876/rcs.v27i.36993

Arab, L. E. y Díaz, G. A. (2015). Impacto de las redes sociales e Internet en la adolescencia: aspectos positivos y negativos. *Revista Médica Clínica Las Condes*, *26*(1), 7-13. https://doi.org/10.1016/J.RMCLC.2014.12.001

Aranda, M., Fuentes, V. y García, M. (2017). "No sin mi Smartphone": Elaboración y validación de la Escala de Dependencia y Adicción al Smartphone (EDAS). *Terapia Psicológica*, 35, 35-45.

Ballesta-Pagán, F. J., Lozano Martínez, J., Cerezo Máiquez, M. C. y Soriano Ayala, E. (2015). Internet, redes sociales y adolescencia: un estudio en centros de educación secundaria de la Región de Murcia. *Revista Fuentes*, *16*(16), 109-130. https://doi.org/10.12795/revistafuentes.2015.i16.05

Baraybar, A., Arrufat, S. y Rubira, R. (2021). Public information, traditional media and social networks during the COVID-19 crisis in Spain. *Sustainability (Switzerland)*, *13*(12). https://doi.org/10.3390/su13126534

Bermejo-Sánchez, EM (2021). *Impacto de la red social TikTok: Influencia como medio de comunicación desde el confinamiento por COVID-19* [Tesis pregrado, Universidad de Sevilla]. Idus. https://idus.us.es/handle/11441/126185

Boffone, T. (2022). Introduction: The Rise of TikTok in US Culture. *TikTok Cultures in the United States*, 1-14. https://doi.org/10.4324/9781003280705-1a

BVSColombia. (2019). *Grupos etarios | BVSColombia*. https://bit.ly/3Qshseb

Cabero, J., Martínez, S., Valencia, R., Leiva, J., Orellana, M. y Harvey, I. (2020a). La adicción de los estudiantes a las redes sociales on-line: un estudio en el contexto latinoamericano. *Revista Complutense de Educación*, *31*(1), 1-11. http://dx.doi.org/10.5209/rced.61722

Cabero, J., Pérez, J. y Valencia, R. (2020b). Escala para medir la adicción de estudiantes a las redes sociales. *Convergencia Revista de Ciencias Sociales*, 27, 2-29. https://doi.org/10.29101/crcs.v27i83.11834

Caro, M. (2017). Adicciones tecnológicas: ¿Enfermedad o conducta adaptativa? *Medisur*, *15*(2). https://medisur.sld.cu/index.php/medisur

Cascardo, E. y Veiga, C. M. (2020). *Tecnoadictos los peligros de la vida online.* Ediciones B 2. https://bit.ly/3kdWUYX

Congreso de Colombia. (2006). *Ley N° 1098 De 2006*. *2006*. https://bit.ly/3BRv9PB

Costa, P., Capoano, E. y Barredo, D. (2021). *Digitales como espejos sociotécnicos de Iberoamérica*, 33-46.

Critikián, D. M. y Núñez, M. M. (2021). Redes sociales y la adicción al like de la generación z. *Revista de Comunicación y Salud*, 11, 55-76. https://doi.org/10.35669/rcys.2021.11.e281

Dabós, M. (2015). Diseñando en entornos digitales. *Bold*, *2*(2), 32-37. https://bit.ly/3OM4PJO

Data reportal. (15 de febrero de 2022). *Digital 2022: Colombia*. https://datareportal.com/reports/digital-2022-colombia

Diaz, C., González, A., Sánchez, C. y Fernández, M. (2018). Hospital Anxiety and Depression Scale (HADS) in Mexicans with Asthma: Reliability and Validity. *Psicología Iberoamericana*, *26*(2), 75-91. https://bit.ly/3ShofJu

Domínguez, L. y Amador-Bedolla, C. (2020). The origin of COVID-19: what is known, what is supposed and (a little) about conspiracy theories. *Educacion Quimica, 31*(2), 3-11. https://doi.org/10.22201/fq.18708404e.2020.2.75461

Echebur, E. y Sebasti, S. (2010). Adicción a las nuevas tecnologías y a las redes sociales en jóvenes: un nuevo reto Addiction to new technologies and to online social networking in young people: A new challenge. *Revista Adicciones*, *22*(2), 91-96. http://bitly.ws/JbsJ

Espinoza, I., Pérez, F., Suquy, E., Arévalo, J., Tenesaca, S., Ankuash, L., Peralta, N., Suquilanda, M., Castro, E., Astudillo, R., Cárdenas, B., Gómezcoello, J., Asanza, J., Ávila, I., Saa, S., Cuzco, B. y López, K. (2021). *TikTok más allá de la hipermialidad* (Primera ed). Universidad Politécnica Salesiana. https://bit.ly/3rR1xw6

Fernández, A. (2021). «Generación Z» en la universidad y la educación médica durante la crisis por COVID-19. *Educación Médica*, 22. https://doi.org/10.1016/j.edumed.2020.09.018

García-Rivero, A., Martínez E. E. y Bonales, G.D. (2022). TikTok Y Twitch: Nuevos Medios Y Fórmulas Para Impactar En La Generación Z. *Revista ICONO 14. Revista Científica De Comunicación Y Tecnologías Emergentes*, *20*(1). https://doi.org/10.7195/ri14.v20i1.1770

García, B., López, M. y García, A. (2014). Los riesgos de los adolescentes en Internet: los menores como actores y víctimas de los peligros de Internet. *Revista Latina de Comunicación Social*, 69, 462-485. https://doi.org/10.4185/RLCS-2014-1020

Gaskin, J. (2016). *Modelos causales*. Gaskination StatWiki. https://bit.ly/3T8SBgg

Gefen, D. y Straub, D. (2005). A Practical Guide to Factorial Validity Using PLSGraph: Tutorial And Annotated Example. *Communications of the Association for Information Systems*, 16, 91-109. https://doi.org/10.17705/1CAIS.01605

George, D. y Mallery, P. (2003). *SPSS for Windows Step by Step A Simple Guide and Reference* (4th ed.). Wadsworth Publishing Co. https://bit.ly/2Ux43W2

Grácia, M., Viñas, F., Juárez, J. y Malo, S. (2020). Risk of Addiction: Its Prevalence in Adolescence and its Relationship with Security of Attachment and Self-concept. *Clínica y Salud*, *31*(1), 21-25. https://doi.org/10.5093/clysa2020a1

Griffiths, L. (2023). Dancing through Social Distance: Connectivity and Creativity in the Online Space. *Body, Space and Technology*, 22, 65-81. https://doi.org/10.16995/BST.9700

Guisande, C., Vaamonde, A y Barreriro, A. (2011). *Tratamiento de datos con R, Statistica y SPSS*. Diaz de Santos. www.editdiazdesantos.com

Gupta, A. K., Upreti, D., Shrestha, S., Sawant, S., Karki, U. y Shoib, S. (2021). Adolescent-parent conflict in the era of 'TikTok': Case reports from Nepal. *Journal of Affective Disorders Reports*, 6. https://doi.org/10.1016/J.JADR.2021.100219

Hair, J. F., Anderson, R. E., Tatham, R. L. y Black, W. C. (2004). Análisis multivariante. In *Análisis*

multivariante (5th ed.). Prentice-Hall. http://bitly.ws/JbKi

Hernández, R., Fernández, C. y Baptista, P. (1991). *Metodología de la Investigación*. Mcgraw Hill. https://bit.ly/2MEaKFC

Herrero, J., Torres, A., Vivas, P. y Urueña, A. (2019). Smartphone Addiction and Social Support: A Three-year Longitudinal Study. *Psychosocial Intervention*, *28*(3), 111-118. https://doi.org/10.5093/pi2019a6

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika*, *35*(4), 401-415. https://doi.org/10.1007/BF02291817

Katz, E. (1959). Mass Communications Research and the Study of Popular Culture: An Editorial Note on a Possible Future for This Journal. *Studies in Public Communication*, 2, 1-6. https://bit.ly/3P2TQeZ

Labuena, I. V. (2021). *Consecuencias del uso de redes sociales en la salud mental health of young people in times of COVID-19* [Tesis pregado, Universidad Zaragoza]. Zaguan. http://bitly.ws/JbMA

Llano-Castaño, D. y Montoya-López, N. (2022). *Influencia de las redes sociales en el pensamiento suicida de los jóvenes*. XXIV Encuentro Nacional de Investigación. Universidad Católica Luis Amigó. https://bit.ly/3ZDTCR6

López, G. (2006). Tecnologías de Internet (de Arpanet a la 3G). *Barataria. Revista Castellano-Manchega de Ciencias Sociales*, 5, 13-35. https://doi.org/10.20932/barataria.v0i5.256

MacLuhan, M. (1996). *Comprender los medios de comunicación Las extensiones del ser humano* (1st ed.). Paidós. https://bit.ly/3zsEP1E

Martín, D. y Medina, M. (2021). Redes sociales y la adicción al like de la generación Z. *Revista de Comunicación y Salud*, 11, 55-76. https://doi.org/10.35669/rcys.2021.11.e281

Méndez, M., Romero, B. M., Cortés, J., Ruíz, A. E. y Prospéro, O. (2017). Neurobiología de las adicciones. *Revista de La Facultad de Medicina de La UNAM*, 60, 6-16.

Ministerio de Salud y la Protección Social de Colombia. (2020). Orientaciones y Protocolos. *Minsalud*. http://bitly.ws/JbN6

Minsalud. (2022). *Ciclo de Vida*. Minsalud. https://bit.ly/3bDoeio

Munayco, S., Oreste, E. y Anchante, P. (2020). *Ansiedad y su Relación con la adicción a las Redes Sociales en una Muestra de Jóvenes de la Provincia de Chincha, 2020* [Tesis pregrado, Universidad Autónoma de ICA]. Repositorio Institucional de la Universidad Autónoma de ICA. http://bitly.ws/JbPE

Nadal, M. V. (2020). Por qué es tan difícil tomar decisiones en mitad de una crisis. *Retina*, 27, 70-71. https://bit.ly/3MvRBzU

Ochoa, F. y Barragán, M. (2022). The excessive use of social networks amid the pandemic. *Revista de Investigación en Ciencias Sociales y Humanidades*, *9*(1), 85-92. https://doi.org/10.30545/academo.2022.ene-jun.8

Olivares, F., Inés, M. y Majuelos, M. (2020). Análisis de las principales tendencias aparecidas en TikTok durante el periodo de cuarentena por la COVID-19. *Revista Española de Comunicación en Salud*, 243-252. https://doi.org/10.20318/RECS.2020.5422

Ortiz, M., Mesa, M. y Muñoz, A. (2013). *Caracterización y evaluación del uso desadaptativo de Internet en estudiantes universitarios* [Tesis Doctoral, Universidad de Granada]. Digibug. https://bit.ly/3zKqYm7

Pérez, C. (2004). *Técnicas de análisis multivariante de datos. Aplicaciones con SPSS*. Pearson Education S.A. https://bit.ly/3U82tbz

Ramón, A. y Segovia, C. (2016). *Comunicación integrada de marketing* (1st ed.). Esic Editorial. https://bit.ly/3yXI3Zi

Ramos, C. (2020). COVID-19: The new disease caused by a coronavirus. *Salud Publica de Mexico*, *62*(2), 225-227. https://saludpublica.mx/index.php/spm/article/view/11276/11857

Ramos, C., Jadán, J., Paredes, L., Bolaños, M. y Gómez, A. (2017). Procrastinación, adicción al Internet y rendimiento académico de estudiantes universitarios ecuatorianos. *Estudios Pedagógicos XLIII*, 3, 275-289. https://bit.ly/3yXI3Zi

Robles, E. D. A. (2015). Adicción a la adicción a Internet. *Rev Psicol Hered*, *10*(2). http://bitly.ws/JbQN

Romero, L. y Rivera, D. (2019). De lo audiovisual a lo transmedia. Competencias para las nuevas narrativas de los prosumidores en el ecosistema digital. In E. López (Ed.), *La comunicación en el escenario digital* (1st ed.). Pearson. https://bit.ly/3ONzAhr

Sahin, C. (2018). Social Media Addiction Scale-Student Form: The Reliability and Validity Study. *TOJET: The Turkish Online Journal of Educational Technology*, *17*(1), 169-182. https://bit.ly/3vLfdKZ

Santana, M., Franco, P. y Hernández, R. (2014). *Rol de las redes sociales Rol de las redes sociales en la elección de una universidad* (1st ed.). Esan.

Schwartz, P. J. y Settimi, C. (2008). Perspective. *Forbes*, *182*(7), 52-53. https://doi.org/10.5558/tfc70499-5

Sevilla Robles, M. (2018). *Resumen sobre Internet*. Universidad de Guadalajara, Centro Universitario de Ciencias Económico Administrativas, Departamento de Sistemas de Información. http://bitly.ws/JbRz

Sotero, L., Ferreira da Veiga, G. Carreira, D., Portugal, A. y Relvas, A. P. (2019). Facebook Addiction and Emerging Adults: The influence of sociodemographic variables, family communication, and differentiation of self. *Escritos de Psicología*, *12*(2), 81-92.

Statista Research Department. (2023). *Redes sociales con más usuarios en Colombia en 2023.* Statista. http://bitly.ws/JaWS

Trejos-Gil, C. A. (2020). Pertinencia del marketing digital en las empresas de Aburrá Sur. *Revista Escuela de Administración de Negocios*, 88, 81-101. https://doi.org/10.21158/01208160.n88.2020.2696

Trejos-Gil, C. A., Castro-Escobar, H. y Amador S. (2020). Indicador de Medición en Psicología online en América Latina en tiempos de pandemia. *Revista Latina de Comunicación Social*, 78,457-476.https://www.doi.org/10.4185/RLCS-2020-1485

Valdéz, V. (2019). Uso y abuso de Internet en adolescentes y su relación con la inteligencia emocional. *In Psycologhy*, *2*(1). http://bitly.ws/JbyX

Vázquez M, Cabrejos S, Yrigoin Y, Robles R y Toro C. (2019). Adicción a Internet y calidad de sueño en estudiantes de medicina de una Universidad peruana, 2016. *Revista Habanera de Ciencias Médicas.* http://scielo.sld.cu/pdf/rhcm/v18n5/1729-519X-rhcm-18-05-817.pdf

Viñals, A. (2013). Las Redes Sociales Virtuales como espacios de ocio digital. *DEUSTO*, 1-18.

We are social y Meltwater. (2023). *Digital 2023 Colombia (febrero 2023) v01*. Datareportal. https://www.slideshare.net/DataReportal/digital-2023-colombia-february-2023-v01

We are social y Hootsuite. (2022). *Digital 2022: La evolución del panorama digital en el Reino Unido - We Are Social UK*. http://bitly.ws/JbSc

Young, K. S. (1996). Internet Addiction: the Emergence of a New Clinical Disorder. *CyberPsychology and Behavior*, *1*(3), 237-244. http://netaddiction.com/articles/newdisorder.pdf

Zapata, L., Karam, J. y Gutiérrez, D. (2018). La Tecnología y su Impacto en la Vida Cotidiana Revisión y Comentarios del libro: Silicon Valley vs. Hollywood: cuando las empresas de tecnología y medios se confunden. *Revista de Management de la Universidad de Palermo*, 17, 43-53. https://bit.ly/3BvIkWw

Zigmond, A. S. y Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*, *67*(6), 361-370. https://acortar.link/rPEJo5

AUTHORS' CONTRIBUTIONS, FUNDING, AND ACKNOWLEDGMENTS

Conflict of Interest: The authors declare that there is no potential conflict of interest related to this article.

AUTHORS

Carlos Andrés Trejos-Gil
PhD(c) in Interdisciplinary Studies in Psychology; International Master's in Strategic Management; Master's in Business Administration (MBA); Specialist in High Management; Publicist; Administrative Engineer. Research and teaching faculty member within the Urbanitas research group. Research and Teaching Faculty since 2018, with administrative roles as the leader of the URBANITAS research group, Category (A) for the 2021-2022 period. Acting Director of the Doctorate in Communication during 2022-1.
Articles in areas of research interest cover social communication, business administration, marketing, advertising, digital marketing, ICT, blended learning, organizational psychology, mental health, anxiety, depression, languishing, prosocial behavior, emotional intelligence, criminal thinking. Business consultant in administrative, commercial, financial, marketing areas, occupational mental health, ontological coaching. Trainer and educator in ICT and digital technologies.
Índice H: 5
Orcid ID: https://orcid.org/0000-0002-6769-3396
Scopus ID: https://www.scopus.com/authid/detail.uri?authorId=57219440207
Google Scholar: https://bit.ly/3yBdlXG
ResearchGate: https://bit.ly/40r5SoF
Academia.edu: https://bit.ly/3ndYOxq
CvLac: https://bit.ly/3XD8miT
Redalyc: https://bit.ly/3lwNkEy
WOS ID: C-1737-201

Carla Cristina Tordecilla-Pájaro
Social Communicator. Member of the Urbanitas research group. Research assistant since 2019 in the Urbanitas research group. Research areas of interest include social media and how it impacts the behavior of young people. Provides support in investigations related to Positive Occupational Mental Health, online psychology platforms, and how social media influenced the mayoral elections in Medellin in 2018.
Orcid ID: https://orcid.org/my-orcid?orcid=0000-0003-1025-420X

Daniela Mena Mena
Student of Social Communication. Member of the Urbanitas research group. Research assistant since 2022 in the Urbanitas research group. Research areas of interest include social media and how they impact the behavior of young people. Provides support in investigations related to Positive Mental Health and how social media influenced the mayoral elections in Medellin in 2018.
Orcid ID: https://orcid.org/my-orcid?orcid=0000-0001-9267-2071