



RESEARCH ARTICLE

## Digital Aera: Exploring Online Social Networks and Their Impact on College Students' Privacy, Security, and Mental Health

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ARTICLE INFO	ABSTRACT
<p>Received: Oct 11, 2024</p> <p>Accepted: Nov 21, 2024</p> <p><b>Keywords</b></p> <p>Social networks Security Privacy Mental health Saudi youth</p>	<p>Online social networks like Twitter, Snapchat, and TikTok have grown substantially, providing enjoyable communication opportunities but also posing privacy and security risks that could impact mental health. This study investigated their effects on Saudi university students' privacy, security, and mental health using a sample of 700 students. Results revealed correlations between online social network use and privacy, security, and mental health. Gender differences were observed in privacy and security, while disparities in privacy and mental health were linked to different study majors. Findings underscored the impact of online social networks on mental health and notions of privacy and security.</p>
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### INTRODUCTION

Humans are inherently social beings, relying on interpersonal connections to strengthen bonds, which profoundly impacts mental health and happiness. Social connectedness aids in coping with stress, worry, and depression, while enhancing self-esteem, comfort, and joy, and preventing loneliness (Chen et al., 2021). Conversely, a lack of strong social relationships can jeopardize an individual's mental and emotional well-being. In today's digital era, social networks like Facebook, Twitter, Snapchat, TikTok, and Instagram have become ubiquitous tools for communication and connection. While each offers unique benefits, it's essential to recognize that social networks can never fully replace face-to-face human interaction (Flaherty et al., 1998; Baym et al., 2004). Face-to-face contact triggers the release of hormones that reduce stress and promote feelings of happiness, health, and positivity (Elias & Gorey., 2022). Paradoxically, excessive time spent on social networks, intended to foster closeness, can lead to feelings of loneliness, isolation, and mental health issues like anxiety and depression (Salviani et al., 2022).

The term "social network" encompasses web and mobile platforms facilitating virtual interactions and content sharing, such as information, messages, images, and videos (Ahmed et al. 2019; Naslund et al., 2020). Research indicates a significant rise in mental health issues associated with social network use, with rates climbing among various age groups (Aschbrenner et al. 2018; Birnbaum et

al. 2017; Naslund et al. 2016). Some individuals are at risk of developing mental health issues like obsessive-compulsive disorder due to excessive social network use (Comer et al., 2014), while others seek information and support for mental health concerns through these platforms (Bucci et al. 2019; Naslund et al. 2016).

One study has investigated the influence of social network use on mental health and wellness, as well as the possibility of utilizing the popularity and interactive features of social networks to improve intervention delivery (Orben & Przybylski, 2019). However, there is ongoing debate regarding the advantages and hazards of social networks' impact on mental health, as well as how to effectively balance these concerns with benefits.

Many individuals with mental illnesses are increasingly accessing online social services (Torous et al., 2015; 2014). There is evidence suggesting that people with mental disorders use social networks at a high rate, with studies examining involvement in these platforms across various situations and disease types. Preliminary research conducted in 2015 found that half of a sample of psychiatric patients used social networks, with younger individuals exhibiting higher usage rates (Trefflich et al., 2015). Similarly, 47% of inpatients and outpatients with schizophrenia reported using social networks, with 79% using them at least once a week (Trefflich et al., 2015).

The way people use social networks appears to affect their mental health, either positively or negatively. One undesirable outcome is Facebook addiction, as reported in the study by Biolcati et al. (2018), which estimated that 3.3% of Italian users were addicted to Facebook. These findings align with earlier research, such as the study by Vangeel et al. (2017), which estimated that 7.1% of secondary school students in Belgium were addicted to Facebook. Similar percentages were reported in studies conducted in the United States (26.2%), Singapore (29.4%), and China (44.5%) (Tang et al., 2017). Different researchers have linked social network addiction to health-related, intellectual, and interpersonal concerns. They concluded that social network addiction is driven by dispositional variables (e.g., personality, needs, and self-esteem), although key explanatory socio-cultural and behavioral reinforcement elements have yet to be experimentally investigated (Lozano Blasco et al., 2020; Andreassen, 2015; Schou et al., 2014).

One research paper has utilized meta-analysis techniques to understand compulsive social network usage and its impact on mental health. Studies have found links between compulsive social network use and mental health issues, psychological disorders, and overall well-being (Marino et al., 2018a, b). While these meta-analyses have contributed to a better understanding of the relationship between social network addiction and mental health, the current study extends this concern to the problematic use of the most common social network platforms used by Saudi youth recently, such as Twitter, Instagram, and TikTok.

To understand the impact of online social networks on Saudi society, it is imperative to delve into Saudi culture, where Islam forms a cornerstone supporting strong familial bonds. The family unit holds paramount importance within the Saudi community (Askool, 2012), leading Saudis to prioritize connections with relatives over strangers (Long, 2005). However, societal dynamics in Saudi Arabia have shifted with rapid modernization and increased exposure to global influences, altering individual behaviors and mindsets (Mohamed & Bendania, 2024; Abdelrheem & Bendania, 2022).

These changes, driven by a surge in education levels and widespread internet usage, have given rise to new behavioral patterns among Saudis, particularly those involved in IT and technology fields. While some are cautious about the potential risks associated with online social platforms, others are intrigued by the implications of artificial intelligence, as seen in platforms like TikTok. Consequently, many young Saudis have become reliant on online social services, raising concerns about its impact on their mental well-being.

Another consequence of social media use pertains to privacy and security concerns. Despite users' awareness of online privacy risks, they often willingly disclose personal information in exchange for personalized services, highlighting the paradoxical nature of privacy desires. The distinction between public and private spheres, once clear, has become increasingly blurred for social media users, necessitating heightened vigilance to mitigate privacy breaches resulting from their behavior. It is crucial for users to strike a balance between public and private spaces and adopt precautionary measures to safeguard their privacy (Kenton et al., 2022).

Notably, individuals vary in their valuation of privacy, and different online behaviors yield different levels of privacy disclosure. Hence, it is essential to evaluate the extent and nature of privacy disclosures resulting from various activities on social networks. Rayan & Xenos (2011) explored social network behavior characteristics within the framework of the big five factor taxonomy, categorizing Facebook-related activities into active social contributions, passive participation, news and information sharing, and real-time social interaction. Numerous studies have investigated the relationship between social media user activity and privacy concerns.

According to Fuchs (2011), the concept of privacy encompasses not only information and communication but also physical, decisional, and psychological/mental aspects (Tavani, 2008). Koops (2017) further delineated eight categories of privacy, including bodily, geographical, communicative, proprietary, intellectual, choice, associative, and behavioral privacy. It is intriguing to note that despite the breadth of these privacy dimensions, many social network users willingly divulge personal information such as home addresses and tourist destinations.

Advancements in technology, particularly biometric models like iris identification systems, face recognition technologies, and fingerprint systems (Gu, 2020), pose unprecedented challenges to privacy. These sophisticated techniques have the potential to breach even the most secluded private spaces through the analysis of human face recognition, body perception, and eye movements (Gu, 2020).

Hence, the present study investigates the nexus between social network usage and its implications for privacy, security, and mental health among Saudi youth. It delves into people's risk perceptions and privacy concerns when engaging with social media networks and examines how these factors intersect with mental well-being.

Nevertheless, it is noteworthy that there exists no universal classification of social network privacy. Individuals' valuations of privacy vary, and distinct behaviors yield differing levels of privacy exposure. Therefore, understanding the nuanced dynamics of privacy on social networks is essential for comprehensively addressing privacy concerns in the digital age.

The aim of this study was multi-faceted. Firstly, it aimed to explore the relationship between online social networks, and other factors. Secondly, investigate the differences between male and female participants. Thirdly, investigate variances in privacy, security, loneliness, satisfaction, stress, anxiety, and depression based on the frequency of social media use. Fourthly: analyze differences in online social network engagement, and other factors across various academic majors. Lastly, identify the key variables most strongly associated with DASS, life satisfaction, and loneliness through the application of linear regression analysis.

This study will answer the following questions:

- 1- How do online social networks relate to online security, online privacy, loneliness, life satisfaction, stress, anxiety, and depression?
- 2- What are the gender differences in these aspects among participants?

- 3- How does the frequency of social media time affect perceptions of privacy, security, loneliness, satisfaction, stress, anxiety, and depression?
- 4- What variations exist in these factors across different academic majors?
- 5- Which variables exhibit the strongest associations with stress, anxiety, depression, life satisfaction, and loneliness?

## METHOD AND PROCEDURES

**-Ethics:** This study adhered to the principles outlined in the Helsinki Declaration and any relevant updates or ethical standards (World Medical Association, 2001). Prior to data collection, participants were informed about the study's purpose and procedures through an online survey. Informed consent was obtained from all participants, who were given the option to either agree to participate ('Yes') or decline ('No'). This ensured that participants were fully aware of their involvement and had the opportunity to make an informed decision regarding their participation in the study.

**-Participants:** The current study has been followed the ethical standards outlined by the American Psychological Association (APA) for conducting research involving human participants. Data were collected from 700 (301 females) participants, from different public and private Saudi Universities. (Mean age =21.8 years, SD =1.2). participants were from different study levels (i.e., freshman, sophomores, Junior and senior), and their involvement took place during the winter semester of 2020–2021.

### Study collected tools

- **Online Social Network form:** The current study used an online social network form prepared by the author. The form consisted of 8 items that measure online social networks habits. The Items have multiple-choice Types which will take values of (0 & 1). Reliability was calculated using test-retest, that revealed (0.83) correlation coefficient after conducting this tool on a pilot sample of 280 University students and ask them to do the list 2 times with 21 days intervals.

- **Modified version of Online Privacy and Security Questionnaire:** Privacy and security were assessed using a modified version of the online questionnaire developed by Georgia Tech University in 1998, which originally comprised 40 items, including options such as 'Yes' vs. 'No', Likert scales, and multiple-choice questions. The adapted version utilized in this study consisted of 27 items, focusing specifically on 'Yes' vs. 'No' responses, and was segmented into two subcategories: security (13 items) and privacy (14 items).

To ensure cultural relevance for use in Saudi Arabia, the questionnaire was translated into Arabic using a back-translation method and distributed to participants via Microsoft Forms. The modification of the questionnaire was necessitated by the need to align the items more closely with Saudi cultural norms, resulting in the removal of several items that were deemed unsuitable. Reliability analysis was conducted for each dimension of the questionnaire, revealing a high level of consistency for both security (Guttman's  $\lambda = 0.78$ ) and privacy (Guttman's  $\lambda = 0.72$ ) dimensions. The overall reliability of the modified version of the online privacy and security questionnaire was found to be satisfactory, with a Guttman's  $\lambda$  coefficient of 0.79

- **Mental Health inventory:** The current study used a set of different scales that measure mental health that have been focused on the following aspects:

- 1- **Loneliness** was assessed using the abbreviated version of the De Jong Loneliness Scale, consisting of 6 items (De Jong Gierveld & Van Tilburg, 2006).

Participants rated their responses on a 5-point scale ranging from 1 (none of the time) to 5 (all the time). The scale was translated into Arabic to facilitate its use in Saudi Arabia. To evaluate the reliability of the scale, Cronbach's alpha coefficient was computed, demonstrating high internal consistency ( $\alpha = 0.90$ ). The translation process involved a back-translation method to ensure linguistic and cultural appropriateness for the target population.

**2- A modified Life satisfaction scale (LiSat10):** a modified version of the LiSat 11 scale was utilized, with one item pertaining to sexual life removed. Originally adapted from Fugel-Mayer et al. (1991), this scale assesses two dimensions representing personal and social aspects of life satisfaction. Participants rated their satisfaction levels on a 5-point scale ranging from 1 (very dissatisfying) to 5 (satisfying). The reliability of the scale was assessed using Cronbach's alpha, demonstrating high internal consistency ( $\alpha = 0.91$ ). To ensure cultural relevance and linguistic accuracy for use in Saudi Arabia, the scale was translated into Arabic using a back-translation method. This meticulous translation process aimed to maintain the integrity of the scale's content while ensuring its appropriateness for the target population

**3- DASS-Y Scale:** The Depression Anxiety Stress Scales (DASS), comprising 21 self-report items, were designed by the Psychology Foundation of Australia (unsw.edu.au) to assess stress, anxiety, and depression among youth. Each scale consists of seven items, subdivided into two to five components. The Depression Scale targets dysphoria, hopelessness, life devaluation, self-deprecation, loss of interest/involvement, anhedonia, and lethargy. The Anxiety Scale evaluates autonomic arousal, skeletal muscle responses, situational anxiety, and subjective anxiety affect experience. The Stress Scale is sensitive to persistent non-specific arousal levels. Participants rated the severity/frequency of experiencing each state over the preceding week using 4-point ratings. Reliability analysis was conducted for each scale, revealing satisfactory levels of internal consistency ( $\alpha = 0.82, 0.78, 0.88$ ). The overall reliability of the scale was also deemed proficient ( $\alpha = 0.81$ ). To ensure linguistic and cultural appropriateness for Saudi Arabian participants, the scale underwent translation using a back-translation method. This meticulous translation process aimed to maintain the integrity of the scale's content while ensuring its suitability for the target population

## Study Procedures

The study was conducted in four distinct stages. Stage I involved the validation of the study tools, which was carried out with 280 participants. In Stage II, the Online Social Networking scale was assessed by distributing a Microsoft Forms link to targeted participants across public and private universities in the Kingdom of Saudi Arabia (KSA). Participants were instructed to generate a unique code, verified by the researcher for future communications and tasks. To safeguard their privacy, participants were encouraged to use personal email addresses rather than university emails for communications that did not require extensive personal information. A comprehensive project introduction was provided to ensure clarity. Upon successful completion of Stage II, Stage III commenced with participants receiving another link to complete the privacy and security questionnaires, as well as surveys on loneliness and life satisfaction. Finally, Stage IV required participants to complete the DASS-Y inventory. Each stage was meticulously executed to ensure data collection integrity and participant confidentiality throughout the research process.

## RESULTS

-To answer the first research question, correlation coefficient was used to investigate the relationship between online social network, Online security, online privacy, loneliness, life satisfaction, stress, anxiety, and depression, as shown in table (1)

**Table 1. Correlation coefficients between study variables**

	Networks	Privacy	Security	Loneliness	Satisfaction	Stress	Anxiety
Privacy	-0.543**	1.00					
security	-0.493**	0.635**	1.00				
Loneliness	0.618**	0.118	-0.315**	1.00			
satisfaction	-0.419**	0.103	0.518**	-0.638**	1.00		
Stress	0.715**	-0.492**	-0.298*	0.529**	-0.349**	1.00	
Anxiety	0.369**	-0.269*	-0.218*	0.638**	-0.414**	0.769**	1.00
Depression	0.296*	0.113	0.156	0.664**	0.182	0.649**	0.785**

\* Significant at level 0.05

\*\* significant at level 0.01

For the second research question that focus on the differences between males and female participants. As shown in table (2) there were significant differences in the scores of online social networks, Online security, online privacy, loneliness, life satisfaction, stress, anxiety, and depression between male and female participants. Specifically, female students got higher scores than male students in online social network use, online privacy, and security, DASS and male students got higher scores than female students in loneliness. According to the difference comparison results and earlier analysis, it could be concluded that gender played a moderating role in the relationship between the use of online social networks and information privacy and security and mental health in general.

**Table 2. Differences between males and females in study variables**

	Male		Female		t	Sig
	Mean	SEM	Mean	SEM		
networks	5.38	0.98	6.16	1.01	3.546**	0.001
Privacy	4.29	0.89	4.86	0.93	3.061**	0.010
security	4.01	0.87	4.35	0.91	2.988**	0.010
Loneliness	4.01	0.69	3.55	0.65	-3.153*	0.050
satisfaction	7.65	0.95	7.55	0.93	1.001	0.981
DASS	11.26	1.93	12.16	2.11	5.698**	0.001

To answer the third research question; as shown in table (3), the differences in privacy, security, loneliness, satisfaction, stress, anxiety, and depression were examined depending on the frequency of online social media use. The online social network use frequency was categorized into three distinct categories. Category I for those who spend 3 hours or more daily on online social media. Category II, those who spend 1 to less than 3 hours on online social media. Category III, those who spend less than 1 hour daily on online social media.

One-way ANOVA revealed a significant difference between distinct categories in privacy, security, loneliness, and satisfaction with different patterns. Results showed that those individuals who spend less than an hour a day showed high concern about security, privacy, and life satisfactions. While those who spend more than 3 hours daily, they showed high scores in loneliness and stress.

**Table 3. Differences in study variables depending on the social network use**

	Category I		Category II		Category III		F	Sig
	Mean	SEM	Mean	SEM	Mean	SEM		

Privacy	5.110	0.8900	4.590	0.860	4.640	0.840	6.921**	0.001
Security	6.960	0.9900	5.960	0.930	5.260	0.890	4.869**	0.010
Loneliness	6.110	0.9100	5.690	0.920	5.980	0.890	1.852	0.251
satisfaction	7.580	1.0200	7.010	1.000	6.880	0.980	4.126**	0.010
Stress	6.050	0.8900	6.560	0.930	7.110	1.010	2.984*	0.050
Anxiety	7.690	1.0500	7.120	1.010	7.390	1.020	1.921	0.198
Depression	7.240	1.0200	7.090	1.000	7.120	1.020	1.879	0.153

To answer the fourth question, as shown in table (4), the differences in privacy, security, loneliness, satisfaction, stress, anxiety, and depression were examined according to the students major. Students' academic majors included three distinct categories: life science and medicine; humanities and social sciences; Science and Engineering. Data analysis revealed a significant difference between distinct categories in privacy, loneliness, and satisfaction with different patterns. Students from science and engineering majors showed greater concern about privacy than other majors. While students from social science and humanities showed greater life satisfaction than other students from other majors. Additionally, students from life science and medicine showed high scores in loneliness.

**Table 4.** Differences in study variables depending on the major study type

	Life science and medicine (N= 198)		Humanities and social sciences (N=244)		Science and Engineering (N=258)		F	Sig
	Mean	SEM	Mean	SEM	Mean	SEM		
Privacy	5.910	0.9930	5.820	0.930	6.830	0.980	4.638**	0.001
Security	6.850	0.9800	6.640	0.970	6.740	0.960	0.892	0.452
Loneliness	6.690	0.9900	5.860	0.950	5.200	0.930	3.257**	0.001
satisfaction	7.160	1.0200	7.920	1.050	6.650	0.980	7.269**	0.001
Stress	6.960	0.9800	6.890	0.970	6.930	0.990	0.768	0.898
Anxiety	7.110	1.0100	7.050	1.000	6.980	0.980	0.879	0.963
Depression	7.680	1.0300	7.560	1.010	7.710	1.040	1.025	0.785
network	7.050	1.0200	7.670	1.050	6.880	0.990	2.459**	0.001

To answer the fifth research question. multiple linear regression was performed as follow:

#### A- Predicating the level of stress, anxiety and depression based on social network

The results of multiple regression (Enter method) have been summarized in table (5). A significant regression equation was found  $F(3, 696) = 21.14, p=0.001$ , with an  $R^2$  of 0.489. DASS could be predicted using social networks, the concern of online privacy and security as illustrated in the following equation:

$$DASS = 94.183 + 13.996 (\text{social network}) - 11.82 (\text{security}) - 9.729 (\text{Privacy}).$$

**Table 5.** Multi regression results of DASS through study variables

Variables	B	St. Error	T	Sig.
Constant	94.183	14.843	-3.186	0.007
Network use	13.996	1.020	7.643	0.001
Security	-11.828	1.726	9.430	0.001

Privacy	-9.729	1.984	10.588	0.001
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### B- Predicating the level of life satisfaction based on social network

The results of multiple regression (Enter method) have been summarized in Table (6). A significant regression equation was found  $F(3, 696) = 34.95, p=0.001$ , with an  $R^2$  of 0.689. Life satisfaction could be predicted using social networks, the concern of online privacy and security as illustrated in the following equation:

$$\text{Satisfaction} = 64.258 - 2.11 (\text{social network use}) + 6.74 (\text{security}) + 1.689 (\text{Privacy}).$$

**Table 6. Multi regression results of satisfaction through study variables**

Variables	B	St. Error	T	Sig.
Constant	64.258	11.257	-2.186	0.010
network use	-2.11	1.251	4.348	0.010
Security	6.74	1.126	11.258	0.001
Privacy	1.689	0.685	3.576	0.050

### General Discussion

The present study investigated the effect of social media usage on information privacy, security, and mental health among Saudi college students. Data was collected from a sample of 700 participants, employing various scales to measure social network activity, information security and privacy, as well as mental health dimensions including life satisfaction, loneliness, stress, anxiety, and depression. Multiple research questions were tested, centering on the influence of online social network utilization on the aforementioned variables.

The first research question was focusing on whether using social media (like Twitter, Snapchat, Instagram) is connected to feeling lonely, stressed, anxious, or depressed. results suggest that relying on social media might make it harder to connect with people in real life, leading to more stress, anxiety, and depression, especially among college students. Also, the more people are into social media, as shown in other studies (Marino et al., 2018; Biolcati et al., 2018; Tang et al., 2017), the lonelier they might feel, and they might not spend as much time with family and close friends. So, using social media a lot seems to make negative feelings worse and could cause more stress, anxiety, and loneliness. These findings suggested that the frequency of using online social networks may support negative emotions and start mental health issues such as prominent level of tension that led to increase the level of stress and anxiety and supporting loneliness. However, the correlation coefficient results revealed a negative relationship between online social network usage and security, privacy, and life satisfaction. Specifically, when time spent on social media decreases, life satisfaction tends to increase. A similar trend was observed regarding perceptions of security and privacy, which improved with reduced time spent on online social networks. These findings imply that prolonged social media engagement among young individuals may inadvertently compromise considerations of security and privacy regarding personal information, and vice versa. Such considerations can significantly impact life satisfaction, as supported by previous research (e.g., Vangeel et al., 2017; Chabral et al., 2017).

When gender differences were tested, it became evident that females exhibited a higher level of engagement with online social networks compared to males. These findings suggest a greater inclination among females towards online social interactions, possibly due to cultural norms in Saudi society. It is plausible that Saudi females find online social connections more comfortable within the confines of cultural limitations, thus explaining the observed gender disparity in social network



usage. Furthermore, differences between genders were also observed in perceptions of security and privacy. Female participants displayed heightened concerns regarding information privacy and security, demonstrating a reluctance to disclose personal or financial details. These findings reinforce the influence of cultural norms on female behavior in online social networking environments, potentially contributing to elevated levels of stress, anxiety, and depression, as evidenced in the analysis of the second hypothesis.

Conversely, the results of the second research question highlighted a significant gender difference in loneliness, with males exhibiting greater feelings of loneliness compared to their female counterparts. This suggests that some Saudi males may resort to online social networking platforms as a means of seeking social connection, reflecting a tendency towards introverted behavior in physical social environments. These findings suggested the detrimental impact of social media on the mental well-being of Saudi college students.

Additionally, differences based on the amount of time spent on online social network revealed variations in perceptions of privacy and security. Individuals who allocated less time to online social media platforms demonstrated higher scores in privacy and security measures compared to other categories. These results suggested that the individuals who they aware of the risk of using different online social networks (i.e., TikTok), try to minimize the time they spend in online social media and vice versa. Interestingly, life satisfaction was varied depending on the time that participants spend in online social network services, in that spending less time on social media will show higher score on life satisfaction than others. These findings suggested a negative impact of using social media, in life satisfaction, privacy and security of the information.

When the impact of different majors on study variables was analyzed, distinct patterns were observed in privacy, loneliness, life satisfaction, and social network usage among participants from various academic disciplines. Notably, students enrolled in science and engineering concentrations displayed a heightened degree of concern regarding the potential risks associated with social network usage compared to their peers in other majors. These findings suggest that individuals' academic backgrounds may influence their awareness levels regarding online privacy risks. Conversely, such differences were not observed among participants enrolled in life science and medicine concentrations or humanities and social science concentrations.

For loneliness, results showed that participants from life science and medicine concentrations scored higher in this factor compared to participants from other study concentrations. It appears that individuals in this concentration prioritize their academic pursuits and achievements to fulfill the expectations of significant others, such as parents and family members. Consequently, these participants may engage more in academic activities than social interactions, resulting in increased feelings of loneliness. In contrast, participants from humanities and social sciences, as well as science and technology, exhibited the lowest scores in loneliness. These findings suggest that individuals from the aforementioned concentrations place greater emphasis on social skills, with teamwork being a prominent feature among students in engineering and social science fields. Moreover, participants in these concentrations tend to prioritize interpersonal and intrapersonal skills, which may explain the observed differences between majors.

Another counterintuitive finding pertained to life satisfaction. The results revealed that students enrolled in humanities and social sciences displayed higher scores in this aspect compared to students from other disciplines. These findings suggest that participants from the social science field possess the adaptability to navigate various life changes successfully, thus fostering a pattern of satisfaction. The underlying reason for this association with students from this particular major remains unclear. One might speculate that the diverse range of argument topics inherent in humanities and social science studies may equip students with additional perspectives to address life issues.

Regarding social networking, the results demonstrated a clear trend indicating greater engagement in online social network activities among participants from social science disciplines. This could be attributed to cultural factors within the Kingdom of Saudi Arabia (KSA) and the personality characteristics of the participants.

In conclusion, study highlights the impact of online social network usage on mental health, privacy, and security. A strong correlation between time spent on these platforms and concerns over privacy and security was reported, suggesting that increased engagement may elevate stress and anxiety levels while compromising personal safety.

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### **Declarations**

### **Research Data Availability statement**

The data and materials used in the current study are available upon request. Anyone who is interested may contact the corresponding author. Please note that access to the data and materials will be subject to ethical and legal considerations, including participants' privacy and institutional regulations.

### **Conflict of interest**

This manuscript has not been submitted to, nor is under review at, another journal or other publishing venue. The author admit that they did not have any kind of conflict of interest.

### **Ethics approval statement**

The study was committed to ethics and participant well-being. The research has followed human participant ethics guidelines. The study needed informed consent from all participants, assuring their voluntary participation. During the research, strong privacy and confidentiality safeguards were taken. The study protocols were designed to minimize participant risk and discomfort. All critical or finding information was protected.

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