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**The relationship of personality traits, motivation to log in,
depression and anxiety to duration of social media use?**

Case study in Tunisia

Naouali Ahmed

Master Thesis

presented as partial requirement for obtaining the Master Degree in Statistics and Information Management

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação

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duration of social media use?**
Case study in Tunisia

by
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Master Thesis presented as partial requirement for obtaining the master's degree in
Information Management, with a specialization in Information Analysis and Management

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July, 2024

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration. I further declare that I have fully acknowledged the Rules of Conduct and Code of Honor from the NOVA Information Management School.

Lisbon, July 2024

DEDICATION

THIS THESIS IS DEDICATED TO MY PARENTS, MY PARTNER, MY SIBLINGS AND FRIENDS FOR THEIR LOVE, ENDLESS SUPPORT AND ENCOURAGEMENT.

ACKNOWLEDGEMENTS

I WOULD LIKE TO EXPRESS MY SPECIAL APPRECIATION AND THANKS TO MY ADVISOR PROFESSOR DR. TIAGO OLIVEIRA, YOU HAVE BEEN A TREMENDOUS MENTOR FOR ME. I WOULD LIKE TO THANK YOU FOR ENCOURAGING MY RESEARCH. YOUR ADVICE HAVE BEEN INVALUABLE.

ABSTRACT

The rise of social media use in the last two decades has presented new opportunities and challenges for its users. It's integration into our daily habits is certainly not something to ignore. Prior studies focused on the social media use impact in the western culture, and little to none have been done in the Arab world. In this study, using population-based data from Tunisian citizens, we studied the association of personality traits, depression, and anxiety to social media behavior in 189 users. The findings highlight that extraverted, fun-seeking, and anxious users tend to spend more time on social media, while conscientious people spend less time online. Our study also suggests that extraverted people, with low agreeableness use social network sites to communicate rather than using them for entertainment.

KEYWORDS

social media, depression, anxiety, motivation, personality.

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1. INTRODUCTION

Nowadays social media, such as Instagram, Twitter, Facebook, and LinkedIn, is commonly used all over the world. Recent reports show that in 2022, out of 7.91 billion, that represents the world population, 5.31 billion people are mobile phone owners, and 4.62 billion people are active on different social networks (kemp, 2022). The same reports show that the social media use has an average of 2 h and 27 min per day per person (kemp, 2022). And the numbers continue to grow exponentially. (Alalwan et al., 2017)

The integration of social media into our daily life has made their role important. These platforms implication in various aspects of our daily life such as business, social, political, and educational lives is continuously increasing. (Alalwan et al., 2016; Zhu & Chen, 2015)

In the present study, social media is interpreted as “web-based services that allow individuals to (a) construct a public or semi-public profile within a bounded system, (b) articulate a list of other users with whom they share a connection, and (c) view and traverse their list of connections and those made by others within the system” (boyd & Ellison, 2007)

As modern communication technologies keep growing in an unparalleled rate, so has the awareness and interest in studying the human-interface relationship and how our psychology influences our online behavior. Previous research suggests that individuals experiencing high levels of “anxiety about social situations and fear of negative peer evaluation and embarrassment” were more likely to engage in online interaction with their friends (Courtois et al., 2012). Marciano (2022) Have also shown that depression is highly correlated to the duration spent on social media. In fact, social media users who exhibit high levels of depression are prone to spend more time on these platforms as a coping mechanism. However, we notice that research in the topic remain inconclusive, fragmented, and heavily skewed toward the western culture and there are little to no studies done on the north African countries ‘population. In her work about social media’s relationship to depression and anxiety among adolescents, Steinsbekk et al. (2023)call for further research to be done in cultures and countries other than the western.

Furthermore, Personality has been regarded as one of the most important topics in psychological research (Li et al., 2014). Prior research suggests that personality may be predictive of many domains of life, including academic success (Komarraju et al., 2009; Serrano et al., 2022), career development (Judge et al., 1999), marriage durability (Donnellan et al., 2004; Igbo et al., 2015), and online behaviors (Wang, 2013). Previous studies have focused on the role of the big 5 personality traits on the social media behavior. Considering that the main role of social network services is to “enable individuals to create personal profiles and social connections and share them with others within their network” (boyd & Ellison, 2007), it explains the amount of research that has been devoted to exploring how one’s character traits, such as extraversion, shyness, social anxiety, and self-esteem, might influence social media use and yield different outcomes (Ryan & Xenos, 2011; Umegaki & Higuchi, 2022)

Umegaki & Higuchi (2022) concluded that how the individual's different personality traits can contribute to the relationship between media use and mental health is still unclear and called for investigating further individual traits of those who use two or more social media sites (SNS), instead of just one.

To respond to these limitations, this study is organized around one complex research question: what is the impact of personality traits, motivation to log in, depression and anxiety on time spent on social media?

Our aim is to contribute to the growing body of knowledge on social media use by exploring the role of key psychosocial predictors such as personality traits and mental health disorders into the frequency of use of social media. As well as the link between personality traits and the mental state of social media users.

Be it to interact with relatives and friends, widen your social circle, get information, and keep up with the news or just for fun, the goal of this study is also to investigate the motives of users who are active on more than one social network service. This approach is in line with previous literature that suggest looking more broadly into social media use, without being limited to a specific social media platform. (Griffiths, 2012)

This research is structured as follows. Section 2 presents the existing theoretical background, proposes the conceptual model and corresponding hypotheses. Section 3 describes the research methodology used to test the model. Section 4 presents the data analysis and results, followed by section 5 which discusses practical and theoretical implications, limitations, and future research suggestions. Lastly, Section 6 presents the key conclusions.

2. THEORETICAL BACKGROUND AND RESEARCH MODEL

2.1. PERSONALITY TRAITS AND MENTAL HEALTH OF SOCIAL MEDIA USERS

The rise of mental illness nowadays such as depression and anxiety have captured the attention of researchers. For that matter, many papers have been published investigating the association between personality traits, values and mental health issues.

A study, on German students, aimed to investigate the relationship between personality traits, mental health variables and media use have indicated positive association between Internet and social platforms use, on one hand, and personality traits (self-esteem, extraversion, narcissism, life satisfaction, social support, and resilience), on the other.

It also concluded that written-based platforms (Twitter, Tumblr) are positively linked to mental health issues i.e., depression, anxiety, and stress. In contrast, photo-sharing platforms (Instagram) may be associated with positive mental health. (Brailovskaia & Margraf, 2018)

The study mentioned earlier by Umegaki, and Higuchi have showed that social media users whose manifested personality traits are extraversion, agreeableness, and self-esteem were negatively associated with negative mental health variables, and positively associated with positive mental health variables. They also proved that neuroticism was positively linked to negative mental health, and negatively associated with positive mental health.

H1a: Personality traits will be associated to depression

- H1a-a Extroversion will be associated to depression
- H1a-b Neuroticism will be associated to depression
- H1a-c Consciousness will be associated to depression
- H1a-d Openness will be associated to depression
- H1a-e Agreeability will be associated to depression

H1b: Personality traits will be associated to anxiety

- H1b-a Extroversion will be associated to anxiety
- H1b-b Neuroticism will be associated to anxiety
- H1b-c Consciousness will be associated to anxiety
- H1b-d Openness will be associated to anxiety
- H1b-e Agreeability will be associated to anxiety

Because of the complexity of the research model, we will only represent H1a-e and H1b-e, below in figure1, instead of the 10 hypotheses above.

2.2. PRIOR RESEARCH ABOUT THE ASSOCIATION OF DURATION OF SOCIAL MEDIA USE, MOTIVES OF USE AND PERSONALITY TRAITS

Researchers have been drawn to the study of social media (SM) due to its widespread popularity among all age groups. A lot of research related to social media was done on teenagers. However, social media use is not limited to adolescents. Adults also use these applications as an important means for socializing and information (Schivinski, 2021). with social media use influencing different types of behavior across the entire lifespan (Schivinski, 2021).

Researchers have particularly focused on the link between personality traits and online behavior in cross-sectional studies reporting in general weak to moderate results. Umegaki & Higuchi (2022) have explored personality and mental health variables of Twitter, Instagram, and Facebook's users among Japanese undergraduate students in 2022. Using the big five personality test, their study showed that users of different platforms seem to manifest different traits compared to users of other sites: Twitter users scored significantly lower in extraversion, conscientiousness, openness, and self-esteem, and higher in neuroticism, behavioral inhibition system (BIS) sensitivity, and social comparison orientation. Whereas users of visual oriented social media such as Instagram and Facebook scored higher when it comes to extraversion, Behavioral activation Scale (BAS)-fun seeking, narcissism, and subjective happiness, and lower in neuroticism.

Cross-sectional investigations of the relationship between users' self-esteem and social media's use showed contradictory results. The study mentioned above showed that Facebook users scored significantly higher in self-esteem, when in a study conducted on Facebook use done by (Mehdizadeh, 2010), Facebook members with low self-esteem spent more time daily on the website and had more attractive photos than those with a high level of self-esteem. Narcissists have a positive and exaggerated self-view, self-love, self-serving bias, sense of entitlement, self-importance, and uniqueness (Campbell et al., 2002; Twenge et al., 2008). On Facebook, these individuals are very active and present. They have many online-friends, post updates very frequently, join many discussion groups and carefully select attractive profile pictures. (Brailovskaia & Bierhoff, 2016). Another study focused on Facebook found a negative relationship between users' level of agreeableness and the time spent online as well as the number of online-friends and the number of uploaded photos (Kuo & Tang, 2014).

Similarly, (Chiu & Huang, 2015) argued that "people may use an social network services to gratify their desire to affiliate with others". Besides, the findings that (a) students who expressed higher levels of loneliness had more Facebook friends, likely to make up for their lack of real-life relationships (Skues et al., 2012) and that (b) those concerned about their relationships with others and their surroundings, reported stronger social motivations of Facebook use as well as greater satisfaction with the service (Kim et al., 2010) seem to confirm this notion of need-driven social media use.

However, need alone is not likely to trigger social media use. Recent research has found that LGBTQ+ found online interactions to be easier, safer, and more tempting than in real life and become more willing to reveal their identity to their online friends. (Charmaraman et al., 2021; Pacey et al., 2022)

H2: Personality traits will have an impact on the time spent on social media.

H2-a: Extraversion will have an impact on the time spent on social media.

H2-b: Neuroticism traits will have an impact on the time spent on social media.

H2-c: Consciousness traits will have an impact on the time spent on social media.
H2-d: Openness traits will have an impact on the time spent on social media.
H2-e: Agreeability will have an impact on the time spent on social media.

H3: Personality traits will impact our motivation to use the SNS.

H3-a: Extraversion traits will impact our motivation to use the SNS.
H3-b: Neuroticism traits will impact our motivation to use the SNS.
H3-c: Consciousness will impact our motivation to use the SNS.
H3-d: Openness will impact our motivation to use the SNS.
H3-e: Agreeability will impact our motivation to use the SNS.

H4: Our motivation to use SNS will have an association with time spent online.

H2 and H3 will be represented in figure 1, for simplification, just by one of relationships for each.

2.3. PRIOR RESEARCH ABOUT SOCIAL MEDIA'S RELATIONSHIP TO DEPRESSION AND ANXIETY

The relationship between mental health and social media use can go both ways, and for that, researchers also studied the internet behavior of depressed and anxious people. The psychological term "emotional suppression" refers to an attempt to escape negative emotions by avoiding or suppressing them. Researchers found that emotional suppression have negative effect and lead to addiction: alcohol and drug abuse, gambling disorder, video game addiction, and problematic Internet use. Emotional suppression has also been shown to predict social media addiction. SNS users who tend to suppress their negative emotions may use social media frequently as an escape from negative emotional states. (Elhai et al., 2018; Quaglieri et al., 2021; Zsido et al., 2021)

Recent studies have concluded that stress and anxiety could cause social media addiction, as social media is used as a distraction and coping mechanism to avoid stressful situations (Andreassen et al., 2017; Dailey et al., 2020)

**H5: Depression will be positively linked to social media use. H6:
Anxiety will be positively linked to social media use.**

From previous hypothesis emerge the conceptual model present in the Figure 1. Social media can be seen as a complex mediator between content and what the individual brings in terms of needs, personality factors, and social and cultural background. The purpose of the present study as mentioned was to examine whether the inter-relationships among time spent on social media, the personality traits, psychological state of users and the motivation to stay connected.

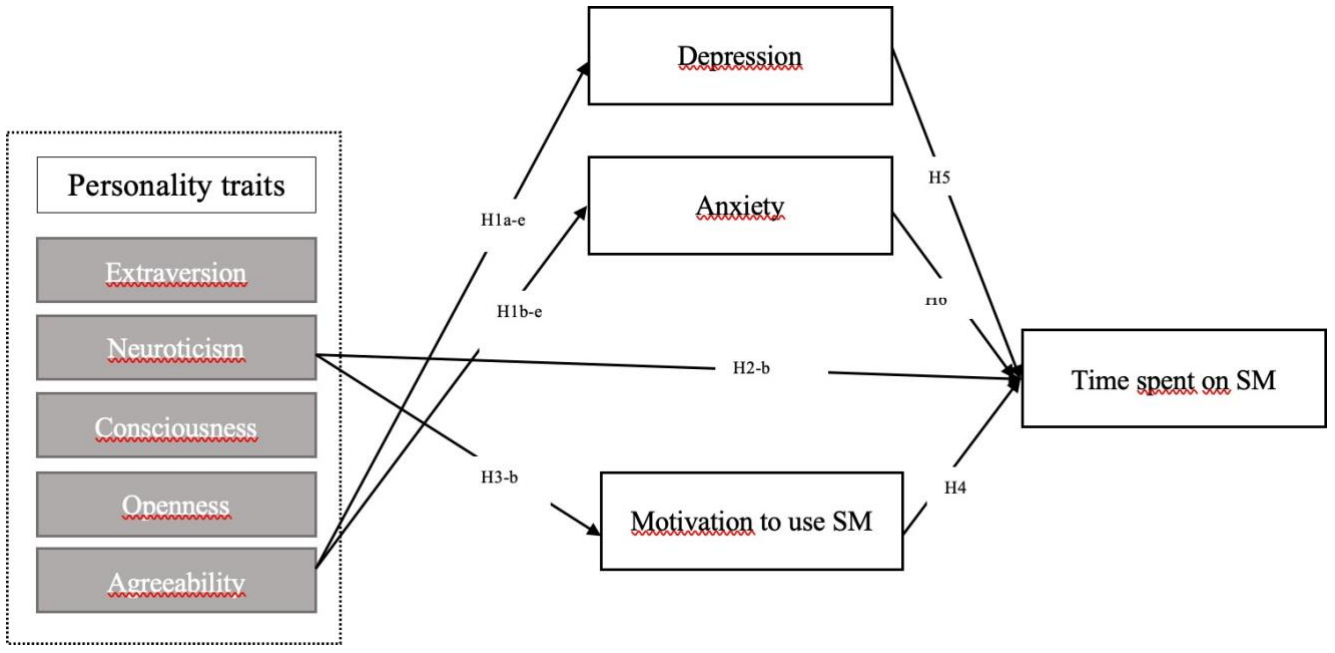


Figure 1 – Research model

3. METHODOLOGY

3.1. DATA COLLECTION

The data for this study was collected in April and May 2024. The research obtained ethical approval from NOVA IMS Ethic. Tunisian adults living in the country or outside were invited to participate. Since data collection was conducted online, participants also needed to have an electronic device and internet access. Participation was voluntary, without compensation. The data collection was conducted using Qualtrics, an online survey platform for data collection and management (www.qualtrics.com). A total of 189 individuals have submitted their answers but only 155 of them finished the survey completely. Our recruitment strategy employed various methods, including both online and in-person approaches (for Tunisians living in Lisbon mainly the Arroios and Anjos Area). Through social media platforms (Facebook, LinkedIn, and Instagram), we posted invitations to attract potential participants. Based on statistics about the respondents' characteristics (Table 1), 66% of respondents are female, 52% ranged from 25 to 35 years of age.

3.2. MEASUREMENT MODEL

The questionnaire measurement items were based on the proposed in the paragraphs below without significant changes. The Appendix 1 shows the items for all constructs.

3.2.1. SOCIAL MEDIA USE

Participants were asked if they had personal accounts on Twitter, Instagram, Facebook, snapchat, tiktok or any other platform. They were then asked which platform they used most and the motivation to use it (entertainment, staying in contact with relatives or friends, posting content or staying updated on the news). Finally, we asked about the average time spent online.

3.2.2. PERSONALITY TRAITS

“Big Five” personality traits. The French version of the Ten-Item Personality Inventory was used to measure five personality domains: Extraversion, agreeableness, conscientiousness, neuroticism, and openness. The Ten-Item Personality Inventory assigns 2 items each to five domains and is rated on a 7-point Likert scale ranging from 1 (disagree strongly) to 7 (agree strongly). Within our sample, Cronbach's alpha was $\alpha = 0.818$, for extraversion, $\alpha = 0.483$, for agreeableness, $\alpha = 0.700$ for conscientiousness, $\alpha = 0.384$, for neuroticism, and $\alpha = 0.385$, for openness. The relatively low internal consistency values for agreeableness, neuroticism, and openness were not unexpected. Given that the TIPI aims to measure broad personality domains solely by using two items, and that it demonstrated sufficient test-retest reliability and criterion-related validity. We used this scale to assess the five personality domains in the present study.

3.2.3. DEPRESSION AND ANXIETY

To evaluate anxiety and depression levels among young individuals, the Hospital Anxiety and Depression Scale by Zigmond & Snaith (1983) was employed. The HADS consists of two subscales, anxiety, and depression, each containing seven items. The scale has been validated for use with adolescents (White et al., 1999). The Cronbach's alphas were 0.859 for anxiety and 0.816 for depression subscales in the current sample.

3.2.4. DEMOGRAPHICS

Sociodemographic characteristics were assessed with questions asking about participants' gender, age, relationship status, employment, and education level.

3.3. DATA ANALYSIS

We used SmartPLS 4 to test the model. SmartPLS4 a popular software for partial least squares structural equation modeling (PLS-SEM) (Ringle, Wende, & Becker, 2015). PLS-SEM was selected for its capability to handle both reflective and formative measures, its effectiveness with small sample sizes, and its suitability for exploratory research focused on prediction and theory building.

4. RESULTS

At first glance, our survey results showed that participants used social media just for socializing 38% and entertainment 62% of answers. That is why in the model we only considered those two motivations and used them as constructs to see their associations with other constructs. It is also important to note that the most used social media platforms are Facebook 29% and Instagram 71%. Furthermore the 5 items of the personality traits were used separately as constructs on PLS4 to test the link of each character trait with the other variables.

After modeling on PLS4 software, Convergent validity and discriminant validity were used to evaluate the measurement model.

Table 1 - Sample statistics

Distribution		(n=155)			
Age groups			Education level		
18-25	32	20%	Primary	0	0%
25-35	80	52%	Secondary	10	7%
35-65	42	27%	Undergraduate	66	42%
>65	1	0.6%	Masters	70	45%
			Doctorate and more	9	6%
Gender					
Female	102	66%			
Male	53	34%			
Marital status			Employment		
Single	104	67%	Student	40	26%
Married	45	28%	Unemployed	16	10%
Divorced	5	4%	Employee	99	64%
Widow	1	0.6%	Retired	1	0.6%

A construct is said to be reliable, if it meets reliability criteria, including Cronbach's alpha (CA) and composite reliability (CR), which must be higher than 0.70, as suggested by Bagozzi & Yi (1988)(see table 2). Additionally, Hair et al (2010), noted that indicator reliability is evaluated by their respective factor loading on the underlying construct. He also argued that an item is considered reliable if its factor loading exceeds 0.70 (but loading of 0.40 is acceptable as well) (See Table 2). The final criterion of convergent validity, average variance extracted (AVE), measures the amount of variance in an item that is explained by the underlying construct. (Fornell & Larcker, 1981) More so Sarstedt et al., (2017) suggested minimum value of 0.40 for estimated average variance extracted (AVE) to be considered ideal although 0.50 is the standard (See Table 2).

Construct Reliability and Validity

To assess the reliability and validity of our constructs, we performed confirmatory factor analysis. Table 2 summarizes the reliability and validity metrics for each construct.

Table 2 - Reliability and convergent validity of the measurement instrument

Constructs	CA	CR	AVE
AGREE	0.483	0.788	0.652
CONSC	0.700	0.864	0.761
EMOTSTAB	0.348	0.754	0.605
EXTR	0.818	0.917	0.846
OPEN	0.385	0.755	0.612
Anxiety	0.859	0.912	0.776
Depression	0.816	0.884	0.724
Time	1	1	1
MOT1: entertainment	1	1	1
MOT2: socializing	1	1	1

Cronbach's Alpha:

As shown in Table 2, most constructs exhibit Cronbach's alpha values above the threshold, indicating good internal consistency. However, being agreeable, emotionally stable and open have lower values, which suggests a need for careful interpretation for these constructs.

Composite Reliability (rho A and rho C):

All constructs exceed the threshold designed by Hair et al, which indicates reliability of our model's constructs.

Average Variance Extracted (AVE):

All constructs in our model exhibit AVE values above 0.5, indicating satisfactory convergent validity.

To conclude, while most constructs demonstrate acceptable reliability and validity, there are concerns related to the reliability of the agreeability, emotional stability, and openness constructs. These findings suggest that further refinement of these constructs may be necessary to improve their measurement properties.

Cross-loading and Factor-loading:

Table 3 – Cross-loading and factor-loading results

	AGREE	Anxiety	CONSC	Depression	EMOST	EXTRA	Entert	OPEN	Social	time
AGREE1	0.718	-0.086	0.110	-0.071	0.134	-0.180	0.082	-0.060	-0.073	-0.146
AGREE2	0.888	-0.137	0.091	-0.197	0.231	-0.231	0.141	-0.289	-0.091	-0.107
CONSC1	0.119	-0.167	0.821	-0.040	0.007	-0.275	-0.081	-0.137	0.090	-0.358
CONSC2	0.096	-0.192	0.920	0.042	-0.006	-0.389	-0.141	-0.151	0.127	-0.536
Depression1	0.041	-0.154	-0.021	0.843	-0.160	0.005	0.181	0.015	0.039	0.033
Depression2	-0.208	-0.044	0.037	0.951	-0.108	0.121	0.067	0.390	0.024	0.021
Depression3	-0.181	-0.076	-0.012	0.924	-0.199	0.140	0.020	0.319	-0.062	0.063

EMOSTAB1	0.238	0.131	0.024	-0.155	0.767	0.078	0.096	-0.026	-0.100	0.143
EMOSTAB2	0.130	0.186	-0.024	-0.111	0.789	0.261	0.118	-0.079	0.043	0.142
EXTRA1	-0.230	0.253	-0.359	0.113	0.230	0.925	0.086	0.362	-0.260	0.611
EXTRA2	-0.243	0.304	-0.357	0.116	0.174	0.914	0.108	0.231	-0.108	0.579
Time	-0.149	0.332	-0.527	0.044	0.184	0.647	0.220	0.278	-0.185	1.000
MOT1	0.143	-0.062	-0.132	0.073	0.138	0.105	1.000	0.052	-0.541	0.220
Anxiety1	-0.140	0.898	-0.156	-0.044	0.222	0.298	-0.047	0.035	0.075	0.240
Anxiety2	-0.143	0.903	-0.220	-0.076	0.151	0.346	-0.094	0.077	0.084	0.363
Anxiety3	-0.082	0.840	-0.157	-0.104	0.175	0.100	-0.002	0.063	0.067	0.253
OPEN1	-0.275	0.103	-0.145	0.320	-0.066	0.271	-0.014	0.884	-0.052	0.250
OPEN2	-0.062	-0.025	-0.111	0.199	-0.036	0.242	0.131	0.765	-0.146	0.179
MOT2	-0.102	0.086	0.127	-0.009	-0.035	-0.203	-0.541	-0.110	1.000	-0.185

In cross-loadings, we examined the various items to identify those that have high loadings on the same construct and those that load highly on multiple constructs. For our model, results exhibit very low cross-loading and high Factor loading that exceeds the threshold, indicating good discriminant validity.

Discriminant Validity

To assess the discriminant validity, the Fornell-Larcker criterion was employed. For adequate discriminant validity, the square root of the AVE (the diagonal values of the matrix) for each construct should be greater than the inter-construct correlations, here represented by the off-diagonal values (Fornell & Larcker, 1981) Table 4 presents the results of this analysis.

Table 4– Fornell-Larcker criterion results

	AGREE	Anxiety	CONSC	Depression	EMOSTAB	EXTR	MOT1	OPEN	MOT2	time
AGREE	0.808									
Anxiety	-0.143	0.881								
CONSC	0.120	-0.206	0.872							
Depression	-0.179	-0.082	0.010	0.851						
EMOSTAB	0.235	0.204	-0.001	-0.170	0.778					
EXTR	-0.257	0.302	-0.390	0.124	0.220	0.920				
MOT1	0.143	-0.062	-0.132	0.073	0.138	0.105	1.000			
OPEN	-0.241	0.067	-0.165	0.342	-0.068	0.325	0.052	0.782		
MOT2	-0.102	0.086	0.127	-0.009	-0.035	-0.203	-0.541	-0.110	1.000	
time	-0.149	0.332	-0.527	0.044	0.184	0.647	0.220	0.278	-0.185	1.000

The results demonstrates that the square root of the AVE for each construct is greater than its highest correlation with any other construct, indicating adequate discriminant validity. In summary, the results from the confirmatory factor analysis demonstrate that our measurement model exhibits satisfactory reliability and validity. Although there are some concerns about the reliability of some constructs, the overall model manifests acceptable levels of internal consistency, convergent validity, and discriminant validity.

Structural Model Testing

This part is aimed to confirm the hypothesised relationships among our constructs, by evaluating the, the size, sign, and significance of the path coefficient. PLS-SEM does not

assume normal data distribution, so the significance testing needs to apply resampling methods such as bootstrapping or jackknifing (Kock, 2018) In our study we used the bootstrapping method. To test the significance level of path coefficients, bias-corrected and accelerated (BCa) bootstrap confidence intervals and t-values were advanced (Kofarmata et al., 2018) To achieve this feat as remarked by (Henseler et al., 2009), the method used 5000 bootstraps samples to calculate the significance of the path coefficients of both the direct and moderating effect. Table 5 shows the results found.

Table 5 – Mediation Analysis

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
AGREE -> Anxiety	-0.134	-0.136	0.075	1.794	0.073
AGREE -> Depression	-0.089	-0.094	0.083	1.068	0.286
AGREE -> MOT1	0.084	0.085	0.046	1.811	0.070
AGREE -> MOT2	-0.083	-0.081	0.039	2.118	0.034
AGREE -> time	0.008	0.008	0.061	0.133	0.894
Anxiety -> time	0.126	0.125	0.055	2.312	0.021
CONSC -> Anxiety	-0.123	-0.125	0.070	1.745	0.081
CONSC -> Depression	0.110	0.112	0.086	1.285	0.199
CONSC -> MOT1	-0.058	-0.055	0.046	1.282	0.200
CONSC -> MOT2	0.022	0.021	0.037	0.587	0.557
CONSC -> time	-0.293	-0.292	0.073	4.010	0.000
Depression -> time	-0.038	-0.038	0.062	0.616	0.538
EMOSTAB -> Anxiety	0.192	0.201	0.083	2.321	0.020
EMOSTAB -> Depression	-0.133	-0.132	0.092	1.456	0.145
EMOSTAB -> MOT1	0.044	0.045	0.047	0.932	0.351
EMOSTAB -> MOT2	0.024	0.020	0.053	0.451	0.652
EMOSTAB -> time	0.035	0.034	0.061	0.568	0.570
EXTRA -> Anxiety	- 0.188	0.189	0.087	2.172	0.030
EXTRA -> Depression	0.077	0.074	0.102	0.757	0.449
EXTRA -> MOT1	0.031	0.033	0.050	0.632	0.527
EXTRA -> MOT2	-0.094	-0.092	0.047	2.013	0.044
EXTRA -> time	0.456	0.459	0.077	5.934	0.000
Entert -> time	0.288	0.294	0.123	2.349	0.019
OPEN -> Anxiety	-0.037	-0.033	0.082	0.451	0.652
OPEN -> Depression	0.336	0.042	0.083	1.047	0.183
OPEN -> MOT1	0.032	0.031	0.046	0.693	0.488
OPEN -> MOT2	-0.032	-0.032	0.038	0.859	0.391
OPEN -> time	0.086	0.086	0.061	1.406	0.160
Social -> time	0.054	0.061	0.172	0.316	0.752

According to the Table above, we can interpret that:

- Being agreeable impacts negatively the use of social media to socialize.

- Anxiety positively influences the time spent on social platforms
- Consciousness had a significant and negative effect ($p < 0.05$) on time spent on the internet.
- Emotional stability positively impacts anxiety
- Extraversion impacts positively time spent on social media and using SM for socializing and negatively influences anxiety.
- The motivation to use SNS for entertainment influences positively the time spent online.

In conclusion, the structural model demonstrates robust relationships among some of the constructs, with significant path coefficients, substantial explained variance, and meaningful effect sizes, providing strong support for a portion of the hypothesized model.

In fact, not all personality traits have a significant link to anxiety, depression nor to the motivation of use and time used on social media.

Depression's link to social media excessive use is found to be non-significant, contrarily to anxiety.

Finally, using social media to stay in contact with people and socialize is proven to have non-significant relationship to the time spent online.

5. DISCUSSION

5.1. INTERPRETATION OF THE FINDINGS

The current study aimed to investigate the relationship between SM use tendencies and the Big Five personality traits, motivation, anxiety and depression. Our results first indicate that the Big Five personality traits (here assessed the with the TIPI) are not all associated the internet use, motivation and mental state.

While extraversion and conscientiousness were significantly associated to the time online. extraversion was positively correlated with excessive use tendencies, whereas conscientiousness was negatively correlated. Participants who score higher on conscientiousness often place high priority on academic and professional goals, have better planning and self-control skills, and therefore might have a better understanding of the consequences of staying online. Hence, they are less inclined to escalate Internet use. This replicates what has already been observed in several studies regarding internet use disorders. (Jojo & Sundaramoorthy, 2022; Kuss et al., 2013; Zhang et al., 2019)

Moreover, by examining the relationship between the Big Five personality traits and the motivation to use the SNS, we found that extraverted people use social media platforms to stay in contact with people and socialize, they may as well have a lot of friends online. Which is in tune with what was shown before in the paper written by (Umegaki & Higuchi, 2022). Taking into consideration that our survey shows that Tunisians use mainly Facebook and Instagram, which are visual oriented platforms, it is safe to say that our results confirm the findings in Umegaki's paper in regards of using these platforms mainly for fun and entertainment.

The significant negative impact of agreeableness on socializing online suggests that users who exhibit low agreeableness like to use Facebook and Instagram for to communicate instead of socializing in real life. This finding aligns with the conclusions drawn by Kuo and Tang. (Kuo & Tang, 2014)

Our results give valuable insights regarding the relationship between social media average time of use and anxiety. Social media could in fact be used as an escape gate, a distraction and a coping mechanism when faced with uncomfortable emotions and situations for people with anxiety symptoms. Which is in tune with the results found in the studies conducted by Elhai, Zsido and Quaglieri. (Elhai et al., 2018; Quaglieri et al., 2021; Zsido et al., 2021)

Our findings suggest that SNS users who manifest emotional stability are positively associated with anxiety, which contradicts those found by Umegaki and Higuchi. (Umegaki & Higuchi, 2022), This could be related to the fact that emotional stability have low Cronbach's Alpha values. On the other hand, we found that Extraverted people have tendency to not suffer from anxiety, which is in line with the findings of Umegaki and Higuchi's work.

5.2. LIMITATIONS AND FUTURE WORK

This study is not without limitations. First, the results of the reliability and validity raise concerns related to the reliability of the agreeability, emotional stability, and openness constructs. Which suggests that further refinement needs to be done.

Second, the sample size was relatively small with many answers coming from Tunisians living abroad which may limit the generalizability of the study on the Tunisian population, as

people living in different conditions may have different life experiences and views. We would find those living abroad to be more conscious and more exposed to negative feelings mainly loneliness that may lead to higher chances of depression and anxiety since the Tunisian culture is family oriented. Further work could be done on site on citizens living in Tunisia.

Third, we recruited participants with higher levels of access to the Internet, and therefore we need to be cautious regarding the generalizability of the results.

Fourth, the results of data based on self-reports are not sufficient for diagnosis because research suggests that they may be inaccurate (Bhandari & Wagner, 2004). self-reported survey, which may be subject to common method bias. To minimize this potential bias, the survey can be enhanced with structured clinical interviews, additional case study evidence, and supplementary reports from the users' significant others.

Finally, Further work could be carried out to address the addictive qualities of social networks for those with long duration online. It is recommended that researchers assess factors that are specific to social network services' addiction, including but not limited to the factors we investigated in our study such as mental health disorders and motives and expectations that lead to social media use in other oriental countries.

6. CONCLUSION

As social media continues to grow and penetrate different aspects of our lives, understanding the factors that influence our behavior and intentions towards it becomes ever more critical. This study aimed to extend our knowledge about the role that plays one's psychological factors such personality traits, levels of anxiety, and levels of depression into what drives us to use social media in the first place and the duration of time we spend on different platforms, specially focusing on Tunisians. The research model was built to study this complex relationship incorporating the different key factors.

In general, our findings suggests that, for the specific case of Tunisians, not all the Big Five personality traits contribute to understanding the interplay between personality and the social media use (time and motivation) nor does our mental state. Our results come to confirm previous papers done on western population and suggest that the culture may not have a significant role into how nowadays users interact with social media. With our approach of sampling and applying advanced statistical models to comprehensively assess the relationship between different personality traits, different mental health issues and social media, we hope to provide a guide for analyses for future studies.

In summary, we found that (a) Extraverted and entertainment-oriented users tend to spend more time on social media, (b) conscious users spend less time online, (c) social media is used as a distraction for people suffering from anxiety (d) entertainment and communication are the main motivations to use stay online, with communication being associated to extraverted people, with low agreeableness.

As social media continues to grow and penetrate different aspects of our lives, understanding the factors that influence our behavior and intentions towards it becomes ever more critical.

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APPENDIX A

Construct	Items	Source
Anxiety	A1 – I feel tense or 'wound up' A2 - I get a sort of frightened feeling as if something awful is about to happen: A3 - Worrying thoughts go through my mind: A4 - I can sit at ease and feel relaxed: A5 - I get a sort of frightened feeling like 'butterflies' in the stomach: A6- I feel restless as I have to be on the move: A7 - I get sudden feelings of panic:	(Zigmond & Snaith, 1983)
Depression	D1 - I still enjoy the things I used to enjoy: D2 - I can laugh and see the funny side of things: D3- I feel cheerful: D4- I feel as if I am slowed down: D5- I have lost interest in my appearance: D6- I look forward with enjoyment to things: D7- I can enjoy a good book or radio or TV program:	(Zigmond & Snaith, 1983)
Extraversion	EXTR1- I see myself as extraverted, enthusiastic EXTR2- I see myself as reserved, quiet	(Umegaki & Higuchi, 2022)
Agreeableness	AGREE1- I see myself as critical, quarrelsome AGREE2- I see myself as sympathetic, warm	(Umegaki & Higuchi, 2022)
Consciousness	CONC1- I see myself as dependable, self-disciplined CONC2- I see myself as disorganized, careless	(Umegaki & Higuchi, 2022)
neuroticism, Emotional stability	EMOSTAT1- I see myself as anxious, easily upset EMOSTAT2- I see myself as calm, emotionally stable	(Umegaki & Higuchi, 2022)
Openness	OPEN1- I see myself as Open to new experiences OPEN2- I see myself as conventional, uncreative	(Umegaki & Higuchi, 2022)
Time	Time- How many hours per day do you use social media?	
Motivation	MOT1- I use SM to entertain myself MOT2- I use SM to stay in contact/ socialize with other people MOT3- I use internet to watch the news MOT4- I use internet to post pictures	Adopted from (Al-Menayes, 2015; Kircaburun et al., 2020; Tang et al., 2022)

APPENDIX B : ETHICS COMMITTEE REPORT

This is to certify that

Project No.: **INFSYS2024-7-148992**

Project Title: **The relationship of personality traits, motivation to log in, depression and anxiety to duration of social media use? Case study in Tunisia**

Principal Researcher: **Ahmed NAOUALI**

according to the regulations of the Ethics Committee of NOVA IMS and MagIC Research Center this project was considered to meet the requirements of the NOVA IMS Internal Review Board, being considered **APPROVED** on 7/14/2024.

It is the Principal Researcher's responsibility to ensure that all researchers and stakeholders associated with this project are aware of the conditions of approval and which documents have been approved.

The Principal Researcher is required to notify the Ethics Committee, via amendment or progress report, of

- Any significant change to the project and the reason for that change;
- Any unforeseen events or unexpected developments that merit notification;
- The inability of the Principal Researcher to continue in that role or any other change in research personnel involved in the project.

Lisbon, 7/14/2024

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