

Do Personality Traits Play a Role in Social Media Addiction? Key Considerations for Successful Optimized Model to Avoid Social Networking Sites Addiction: A Developing Country Perspective

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Abstract

The current study attempts to examine the relationship between the Big Five personality traits and the social media addiction in a developing country perspective like Jordan. The moderating effects of gender, age, college type, expense and experience were also examined. By surveying 380 undergraduate college students, it was found that the respondents spend on (Facebook, WhatsApp and YouTube) more than the addiction benchmark. Only 7.9% of the participants are classified as social media addicts; however, 62.1% are in the alert group, meanwhile, 30% are in the normal group. The current study shows that individuals who tend to be less neurotic, extraverted and open to untraditional things and ideas are likely to use the social media sites heavily; therefore, they are prone to be addicts. The results also reveal that the moderation role of gender, age and expense does not have any moderation effects. However, there is some moderation role regarding the college type and experience on social networking sites addiction. The findings also demonstrate that men spend more time than women do in the time they spend on Facebook, YouTube, Instagram, Google + and LinkedIn. Meanwhile, women spend more time on WhatsApp and Twitter. Such insights can be used to identify and select best plans, strategies, manners and SNS features that can be employed to reach an effective and right SNS usage among students to optimize their health and academic performance. Accordingly, the development of societies and countries can be achieved. Implications, limitations and future studies for research are suggested.

Keywords:

Social Media Addiction, Big Five Personality Traits, Gender, Age, College Type, Expense, Experience, Jordan

1. Introduction

The development and booming in telecommunications, mobile devices, and mobile applications make the Internet with its applications and services an essential part of human daily lives. Defiantly, this development has made drastic improvement in the society.

The Internet has been used and applied for several purposes such as communication, entertainment, learning,

socializing, and many others. Recently, social networking sites (SNSs) like (Facebook, Twitter, LinkedIn, Blogs, Myspace, Tweetvite, Eventful, Social Bookmarking, Social Navigation, etc.) can provide such applications to the interested users from different domains e.g. university students. Kaplan and Haenlein, ([1], p.61) define SNSs as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content." They mentioned that individuals and business from different domains might increase their revenue by taking into consideration the advantage of the content of SNSs.

Recently, a report prepared by Social Media Marketing Industry Report [2], claimed that that Facebook and LinkedIn are the two most important SNSs for marketers. Marketers are using Facebook with 93%; however, 68% want to learn more about it and 62% plan on increasing Facebook activities. Meanwhile 66% of marketers plan to increase their usage of SNSs in the future. However, Twitter, YouTube and LinkedIn hold the top spots for that future plans.

In the Arab World, a report prepared recently by Arab Social Media Report [3], reported that the most used SNSs among the Arab World is Facebook with 87% of usage followed by WhatsApp with 84% of usage followed by YouTube with 39% of usage followed by Instagram with 34% of usage and finally Twitter with 32% of usage. According to the same report, the usage of Facebook in Jordan also ranked first with 89% of usage followed by WhatsApp with 71% of usage followed by YouTube with 66% of usage followed by Google Plus with 43% of usage finally Instagram with 34% of usage.

Several studies have indicated that the number and popularity of SNSs have increased worldwide as it can facilitate the communication among the users. However, it is important to pay attention to time while using these

SNSs. Without a doubt, the excessive use of SNSs may degrade the academic performance and lead to health problems such as addiction [4]. Moreover, social media addiction "can be disruptive to many aspects of life; for students, it may hinder their studies and impact their long-term career goals." [5]. In addition, the intensive use of mobile devices such as smart phones, especially during lectures, may disturb students' concentration, distract them from study, and leads them to worse results in learning ([6], [7]). Obviously, the trend of individuals using SNSs for excessive amounts of time is increasing due to proliferation of those devices [8]. Indeed, SNSs addiction is considered as a subtype of Internet addiction due to its several activities and applications that exist to support the users of SNSs [9].

Students are now using SNSs for several purposes such as adding comments, browsing news feeds, homework achievement, chatting, reading ads, communicating and finding people, adding images, discussing current events through blogs ... etc. Accordingly, there is an imperative need to help select the best strategies, plans and manners to optimize SNS usage among students in such a way that achieves value and, thus, to optimize their health and academic performance. The personality trait of individuals is one of the important factors to understand, predict and distinguish their behavior in various situations such as social situations e.g. SNSs [10]. Therefore, the predictors of personality traits of the university students and SNSs addiction in a developing country perspective like Jordan will be investigated and analyzed in this paper in order to avoid the excessive use of SNSs, which will lead to addiction, and prepare appropriate plans to enhance the usage of SNSs.

The current study is organized as follows. Section 2 presents the literature and research hypotheses development. A research design and method are presented in section 3. The fourth section presents the results of the research. Section 5 provides the discussion. Section 6 provides the conclusions. Finally, implications, limitations and future studies are presented in section 7.

2. Literature and research hypotheses development

Technology addiction has been frequently mentioned recently as a negative result of employing computer and communication technologies ([11], [12], [13]). Smart phone addiction ([14], [15]), Internet addiction ([16], [17], [18]), and SNSs addiction [5] are different modes for excessive use of such technologies. The increasing number of SNSs - e.g. Facebook, the increasing number of SNSs users, and the increasing amount of time spent using such sites have increased the attention to the SNSs addiction [9], especially among university students.

Several researchers have attempted to estimate the amount of time individuals spend on the SNSs (e.g., [19], [20], [21], [22]). The negative connection between SNSs usage and addiction has been investigated ([9], [23]). The obtained results showed that Facebook and other SNSs are popular among many university students; but the addictive SNSs use contributes to the emergence of several concerns such as: low self-esteem, self-efficacy, and academic performance, and introversion ([6], [24], [25]). In Addition, other studies found out that all the dimensions of SNSs use have a significant negative impact on student adjustment to college [26].

2.1 Personality traits

The Big Five model by Nevid [27] is a common model that assesses personality. The model based on five dimensions. Firstly, extraversion (e.g., being sociable, assertiveness, friendly, talkative, enthusiastic, optimism, and being upbeat and energetic). Secondly, agreeableness (e.g., being collaborator, altruism, care taker, personal warmth, and concerned with others feeling and needs). Third, Conscientiousness (e.g., being responsible, self-disciplined, reliable, stable, achieved, ethical, good planner, organized, work hard and punctual). Fourthly, neuroticism (e.g., being anxious, tensed, worried, insecure, guilty and instable emotionally). Finally, openness (e.g., being open to untraditional things and ideas, seeking novelty, intelligent, imaginative, intellectually curious, and broad cultural interest). A number of studies have aimed to analyze the relation between such traits and SNSs addiction. Their findings were: SNSs users were more extroverted ([19], [28], [29], [30], [31]), and open ([19], [29]), indicating a positive correlation among extraversion and the use of SNSs.

Additionally, narcissist and open minded individuals tend to be more active on SNSs ([32], [33]). Conversely, time spent using SNSs correlate negatively with conscientiousness [30]. That is, people scoring low on conscientiousness are assumed to use social media cautiously. Agreeableness, conscientiousness, and neuroticism individuals are negatively affected by the online social support and Facebook addiction ([8], [10]).

2.2 SNSs addiction

SNSs addiction is defined as a subtype of Internet addiction. The increasing popularity of SNSs and its applications, on one hand, and the increasing number of users spending more time using such SNSs, on the other hand, led to the emergence of Internet addiction, which increased interest of SNSs addiction as a specific form of internet addiction [9]. SNSs usage are increasing worldwide especially among the youth who consider these sites as main media to communicate with each other ([34], [35], [36]). Obviously,

SNSs gain more popularity with the verity of its application in different perspectives.

Based on this prior work, it is necessary to investigate and analyze further the relationship between the personality traits and SNSs addiction. Therefore, the following hypotheses will be tested:

- H1: Neuroticism influences the Social Media addiction.
- H2: Extraversion influences the Social Media addiction.
- H3: Openness influences the Social Media addiction.
- H4: Agreeableness influences the Social Media addiction.
- H5: Conscientiousness influences the Social Media addiction.

2.3 Moderating Effect of Age and Gender

Age and gender are widely used as moderating factors and control variables, especially for investigation their relation with personality traits. Gender is considered a basic factor with varying effects in several areas and environments ([29], [37], [38], [39], [40], [41], [42], [43]). However, some studies did not find any significant effect regarding gender ([8], [44], [45], [46], [47], [48], [49]). Therefore, this study suggests the following hypotheses:

- H6: Neuroticism influences the Social Media addiction more strongly for women than for men.
- H7: Extraversion influences the Social Media addiction more strongly for women than for men.
- H8: Openness influences the Social Media addiction more strongly for women than for men.
- H9: Agreeableness influences the Social Media addiction more strongly for women than for men.
- H10: Conscientiousness influences the Social Media addiction more strongly for women than for men.

Recently, research showed that personality traits continue to change with different age levels, and that these changes may be quite substantial and consequential [50]. Other investigators confirmed that age and gender can change the Big Five personality factors [51]. Bakker et al. [52] found a significant relationship between age, gender and the Big Five personality traits. Zhang [51] also pointed out that personality traits statistically affected by age and gender among Chinese university students. Liébana-Cabanillas et al. [53] analyzes the impact of age on the acceptance of mobile payment systems by consumers. Hudson et al. [54] investigate whether age moderates the relationship between changes in social investment and changes in personality traits. They found that age did not exert any effect between social investment at work and changes in personality traits. In general, a variety of studies recognized the importance of age ([29], [32], [36], [37], [38], [43], [44], [45], [55], [56]). However, several studies did not find any significant moderating influence of age ([47], [57], [58]). Thus, the following hypotheses are suggested.

- H11: Age influences the way an individual perceives that Neuroticism affects the Social Media addiction in a way that it is stronger for older than younger individuals.
- H12: Age influences the way an individual perceives that Extraversion influences the Social Media addiction in a way that it is stronger for older than younger individuals.

H13: Age influences the way an individual perceives that Openness influences the Social Media addiction in a way that it is stronger for older than younger individuals.

H14: Age influences the way an individual perceives that Agreeableness influences the Social Media addiction in a way that it is stronger for older than younger individuals.

H15: Age influences the way an individual perceives that Conscientiousness influences the Social Media addiction in a way that it is stronger for older than younger individuals.

2.4 Moderating Effect of College Type (scientific, humanitarian)

College type (scientific, humanitarian) can play an important role in studying the behaviors and attitudes of the students due to its nature of requirements and courses e.g. scientific colleges courses focus on applied scientific side, conversely, in humanitarian colleges, courses focus on humanitarian theoretical aspects which are more flexible. Thus, it is important to investigate whether the college type might moderate the relationship between the Big Five personality traits and SNSs addiction or does not. Tang et al. [8] examined the association between Facebook addiction and school type. They did not find any significant differences between Facebook addiction and school type. Thus, the hypotheses are proposed as follows:

- H16: Neuroticism influences the Social Media addiction more strongly for scientific than humanitarian colleges.
- H17: Extraversion influences the Social Media addiction more strongly for scientific than humanitarian colleges.
- H18: Openness influences the Social Media addiction more strongly for scientific than humanitarian colleges.
- H19: Agreeableness influences the Social Media addiction more strongly for scientific than humanitarian colleges.
- H20: Conscientiousness influences the Social Media addiction more strongly for scientific than humanitarian colleges.

2.5 Moderating Effect of Income or Expenses (students' monthly expense)

For college students, students' monthly expense is a potential moderating factor that might change their personality traits and affect the Internet and SNSs usage [59]. Several researchers indicated that SNSs e.g. Facebook usage were not affected by the income level ([60], [61]). Studies have found that personality traits continue to change with the difference in the income and expenses ([62], [63]). Thus, the hypotheses are proposed as follows:

- H21: Neuroticism influences the Social Media addiction more strongly for individuals with high monthly expense.
- H22: Extraversion influences the Social Media addiction more strongly for individuals with high monthly expense.
- H23: Openness influences the Social Media addiction more strongly for individuals with high monthly expense.
- H24: Agreeableness influences the Social Media addiction more strongly for individuals with high monthly expense.
- H25: Conscientiousness influences the Social Media addiction more strongly for individuals with high monthly expense.

2.6 Moderating Effect of Experience

As individuals, gaining more and more experience with systems such as SNSs they might change their personality traits regarding the nature and amount of use. Some studies assumed that with increasing experience, the effect will become stronger over the time ([64], [65]). On the other hand, some studies assumed that the effect will attenuate over time as users gain more and more experience with a system such as SNSs ([49], [58], [66]). Based upon the above argument, this study suggests the following hypotheses:

H26: For individuals with higher level of experience, neuroticism has a stronger effect on Social Media addiction than those with a lower level of experience.

H27: For individuals with higher level of experience, extraversion has a stronger effect on Social Media addiction than those with a lower level of experience.

H28: For individuals with higher level of experience, openness has a stronger effect on Social Media addiction than those with a lower level of experience.

H29: For individuals with higher level of experience, Agreeableness has a stronger effect on Social Media addiction than those with a lower level of experience.

H30: For individuals with higher level of experience, Conscientiousness has a stronger effect on Social Media addiction than those with a lower level of experience.

3. Research design and method

3.1. Participants (Population and Sample)

This study treated undergraduate students ranging from 1st to 5th year, who enrolled in the first semester of the academic year (2015/2016) from both scientific and humanitarian colleges at Al-al Bayt University in Jordan see Table 1. 400 students were recruited with a traditional paper-based survey and obtained 380 valid survey with response rate 95% by using a stratified random sample. In Jordan, the traditional paper-based survey is preferred due to its high response rate [49].

Table 1: Demographic profile of the respondents

Variable	Frequency	Percentage
Gender	Female	277
	Male	103
Age (years)	Less than 20	39
	20- Less than 25	327
	More than 25	14
Academic study level	First Year	21
	Second Year	40
	Third Year	140
	Fourth Year	168
	Fifth Year /Others	11
Expense	Less than 50 JD	78
	50 less than 100 JD	169
	100 less than 200 JD	99
	More than 200 JD	34
College	Scientific	169
	Humanitarian	211

3.2 Measures

A survey questionnaire was developed to achieve the objectives of the current study. The questionnaire used in this study included the following: firstly, the Big Five personality traits factors, which determine the individual's personality: Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness. Secondly, the social media addiction scale, which determines the individual's level of addiction: withdrawal, tolerance, life problems and substitute satisfaction. Finally, the moderation factors: Gender, Age, College type, Expense and Experience. After translating the survey from English into Arabic, the survey was refereed by a panel of psychologists and specialists in the field of information technology to guarantee the content, face validity and the translation of the survey. A pilot study consisted of (40) students was applied on a sample. Therefore, based on the recommendations of the specialists and the results of the pilot study, the survey was modified. The researchers used a 5-point scale.

3.2.1 The Big Five personality traits scale:

The scale of the Big Five personality traits consists of forty-four items distributed over five dimensions (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) as shown in Table 2. The internal consistency alpha coefficients of the Big Five personality traits were (0.676, 0.767, 0.703, 0.676, and 0.618) respectively. The forty-four items are adapted from John [67], study.

Table 2: The Big Five personality factor scale

Dimensions	Item	Total
Neuroticism	4, 9R, 14, 19, 24R, 29, 34R, 39	8
Extraversion	1, 6R, 11, 16, 21R, 26, 31R, 36	8
Openness	5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44	10
Agreeableness	2R, 7, 12R, 17, 22, 27R, 32, 37R, 42	9
Conscientiousness	3, 8R, 13, 18R, 23R, 28, 33, 38, 43R	9

* "R": denotes reverse-scored items

3.2.2 The Social media addiction scale:

The scale of the social media addiction adapted from Hong et al. [68] study. Which consists of twelve items distributed over four factors (withdrawal, Tolerance, Life problems and Substitute satisfaction) see Table 3. The internal consistency alpha coefficients of the four factors were (0.726, 0.643, 0.647 and 0.659) respectively with a total internal consistency alpha coefficient (0.839).

Table 3: The four factors of Social media addiction scale

Item	Description
withdrawal	"When college students did not use Facebook, they would feel that they were experiencing difficulties."
Tolerance	"When college students needed to use Facebook more and more to derive satisfaction."
Life problems	"When college students using Facebook ended up having academic difficulties, time management issues, and life problems."
Substitute satisfaction	"When college students would use Facebook to derive satisfaction, and they would feel a strong need to use Facebook again."

3.3. Data analysis

The present study used descriptive statistics, bivariate correlations to evaluate the correlations among the study variables and a hypothetical model to explore the relationships among the five personality trait factors, Social media addiction and the moderator variables Gender, Age, College Expense and Experience. In order to achieve that, the researchers used SPSS and a WarpPLS 5.0 software that applies the partial least squares (PLS) based (SEM) technique (PLS-SEM). The goal of using the SEM analysis may differ according to the purpose of the analysis, if we just want to test the hypotheses, the model-fit indices are less important; contrariwise, if we want to test the whole model fit quality [69].

4. Results

4.1. Descriptive statistics

This study found out that the respondents spent most time on Facebook followed by WhatsApp, YouTube, Instagram, Google +, Twitter and LinkedIn see Table 4.

Thompson and Lougheed [70] indicated that if individuals spent more than one hour on using asocial network site such as Facebook, they would be classified addicts person. Accordingly, as illustrated in Table 4,the respondents spend on (Facebook, WhatsApp and YouTube) more than the addiction benchmark distributed on chatting, communicating and finding people, browsing news feeds/read the comments of other people, homework achievement and reading ads respectively as in Table 5.In addition, the overall usage average hours(1.39) per day also exceed that benchmark. The result in line with [68].

This study has come up with the fact that men spend more time on Facebook, YouTube, Instagram, Google + and LinkedIn than women do. However, women spend more time on WhatsApp and Twitter.

Table 4: The usage hours per day of social media

Order	Social media	Female	Male	Total usage hours	Percentage	Mean
		M. usage hours	M. usage hours			
1	Facebook	2.75	3.82	1154.1	31.2	3.04
2	WhatsApp	3.07	2.74	1132.4	30.6	2.98
3	YouTube	1.06	1.78	478.8	12.9	1.26
4	Instagram	0.94	0.96	358.0	9.7	0.94
5	Google +	0.72	0.81	283.7	7.7	0.75
6	Twitter	0.49	0.45	183.2	4.9	0.48
7	LinkedIn	0.27	0.40	114.9	3.1	0.30
The overall average						1.39

The findings provided by this study demonstrate that the respondents spent the most time on chatting, with an average of 668.8 hours each day. Followed by communicating and find people, with an average of 472.7 hours each day. Followed by browsing news feeds/Read the comments of other people, with an average of 446.8 hours each day. Followed by homework achievement, with an average of 429.4 hours each day. Followed by reading Ads, with an average of 378.6 hours each day, followed by adding images, with an average of 335.0 hours each day. Followed by adding their own comments, with an average of 329.1 hours each day. Finally, discussing current events through blogs, with an average of 272.9 hours each day, see Table 5.

Table 5: The usage hours per day of social media function

Order	Social media Usage	Usage hours	Percentage	Mean
1	Chatting	668.8	20.1	1.76
2	Communicate and find people	472.7	14.2	1.24
3	Browsing news feeds / Read the comments of other people	446.8	13.4	1.18
4	Homework achievement	429.4	12.9	1.13
5	Read Ads	378.6	11.4	1.00
6	Add images	335.0	10.0	0.88
7	Add my own comments	329.1	9.9	0.87
8	Discuss current events through Blogs, Weblog	272.9	8.2	0.72

4.2. Correlations between variables

The means, standard deviations, and correlation coefficients of the variables are illustrated in Table6. Obviously, most of the correlation coefficients among the variables were significant. Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness were significantly correlated. In addition, Social media addiction, Withdrawal, Tolerance, Life problems and Substitute

satisfaction were significantly correlated. On the other hand, Neuroticism did not show any significant correlation to the Withdrawal, Tolerance or Life problems. Extraversion did not show any significant correlation to the Withdrawal, Tolerance, Life problems or Substitute satisfaction. Meanwhile, Openness has a significant

correlation to the Withdrawal, Tolerance, Life problems and Substitute satisfaction. Agreeableness and Conscientiousness did not show any significant correlation to the Withdrawal, Tolerance, Life problems or Substitute satisfaction.

Table 6: The correlation coefficients in personality traits and Social media addiction (n=380).

		M	SD	1	2	3	4	5	6	7	8	9
1	Neuroticism	3.5267	0.50417	1.00								
2	Extraversion	3.6316	0.55357	.583**	1.00							
3	Openness	3.4019	0.49841	.667**	.664**	1.00						
4	Agreeableness	3.4987	0.57472	.547**	.538**	.410**	1.00					
5	Conscientiousness	3.4987	0.57472	.547**	.538**	.410**	1.000**	1.00				
6	Withdrawal	2.6333	1.05106	.005	-.050-	.109*	-.063-	-.063-	1.00			
7	Tolerance	3.0570	1.20488	.093	.052	.185**	.065	.065	.482**	1.00		
8	Life problems	3.1202	0.96366	.062	.057	.201**	.087	.087	.412**	.426**	1.00	
9	Substitute satisfaction	2.9781	0.99741	.129*	.046	.165**	.031	.031	.576**	.444**	.432**	1.00

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

4.3 Social media addiction results

Table 7 illustrates the mean for the scores of responses for social media addiction statements. When this mean is compared to the 5-point scale (High >3, Neutral =3, and Low <3), it was found out that Tolerance and Life Problems fall under the category “High”. However, Withdrawal and Substitute Satisfaction fall under the category “Low”.

Table 7: Summary the mean for the scores of responses for social media addiction statements.

		GM	M	SD
1			2.62	1.314
2	Withdrawal	2.63	2.69	1.276
3			2.59	1.333
4			3.23	2.406
5			2.81	1.254
6	Tolerance	3.06	3.13	1.233
7			3.10	1.261
8			3.14	1.288
9	Life Problems	3.12	3.12	1.228
10			2.91	1.301
11	Substitute Satisfaction	2.98	3.03	1.222
12			3.00	1.353

Further, the researchers investigated the frequency of social media addiction scales by applying the diagnosis criteria suggested by the Obsessive Compulsive Foundation (OCF), as shown in Table 8 and Table 9. It was found out that only 7.9% of the participants were classified as social media addicts, however 62.1% were in the alert group, meanwhile, 30% were in the normal group. These findings showed that social media addiction is a critical issue between participants; with nearly 70% of compulsive use. This finding agrees with Tang et al. [8] who said that "“Facebook addiction” is not merely a buzzword and has become a severe problem among college students".

Table 8: Frequency distribution of Social media addiction scores.

Score	Count	Percentage
20–29	15	3.947
30–39	42	11.053
40–49	57	15.000
50–59	147	38.684
60–69	33	8.684
70–79	56	14.737
80–89	19	5.000
>90	11	2.895
Total	380	100

Table 9: Classification of Social media addiction among students

Classification	Count	Percentage
Addict	30	7.9
Alert	236	62.1
Normal	114	30
Sum	380	100

Addict (>=80), alert (50–79), and normal (<50)

In the light of these data, the excessive use of social media can lead to addiction, which may lead to a negative impact on the behavior of the adolescents.

4.4. Assessing the model fit

The model’s goodness of fit indices was evaluated by using WarpPLS 5.0 via calculated the p-values for: average path coefficient (APC=0.069, P=0.044), the average R-squared (ARS=0.084, P=0.025) and Average adjusted R-squared (AARS=0.005, P=0.231) be equal to or lower than 0.05. The Average block VIF (AVIF=2.618), acceptable if <= 5, ideally <= 3.3 and Average full collinearity VIF

(AFVIF=2.980) acceptable if ≤ 5 , ideally ≤ 3.3 . R-squared contribution ratio (RSCR=0.684), acceptable if ≥ 0.9 , ideally = 1. Statistical suppression ratio (SSR=0.867), acceptable if ≥ 0.7 . Nonlinear bivariate causality direction ratio (NLBCDR=0.750), acceptable if ≥ 0.7 . The VIF values are recommended to be lower than five in order to check the absence of multicollinearity [71]. Certainly, all VIFs values are less than five; concluding that no

multicollinearity issue (Neuroticism= 3.233, Extraversion= 3.369, Openness= 3.862, Agreeableness= 2.332, Conscientiousness= 1.904, Social media addiction= 1.209). Therefore, the model has a good fit to the data [69].

Figure 1 presents the significant relationship among the study variables. Table 10 presents the path coefficients with their significance levels and the results of whole model hypotheses.

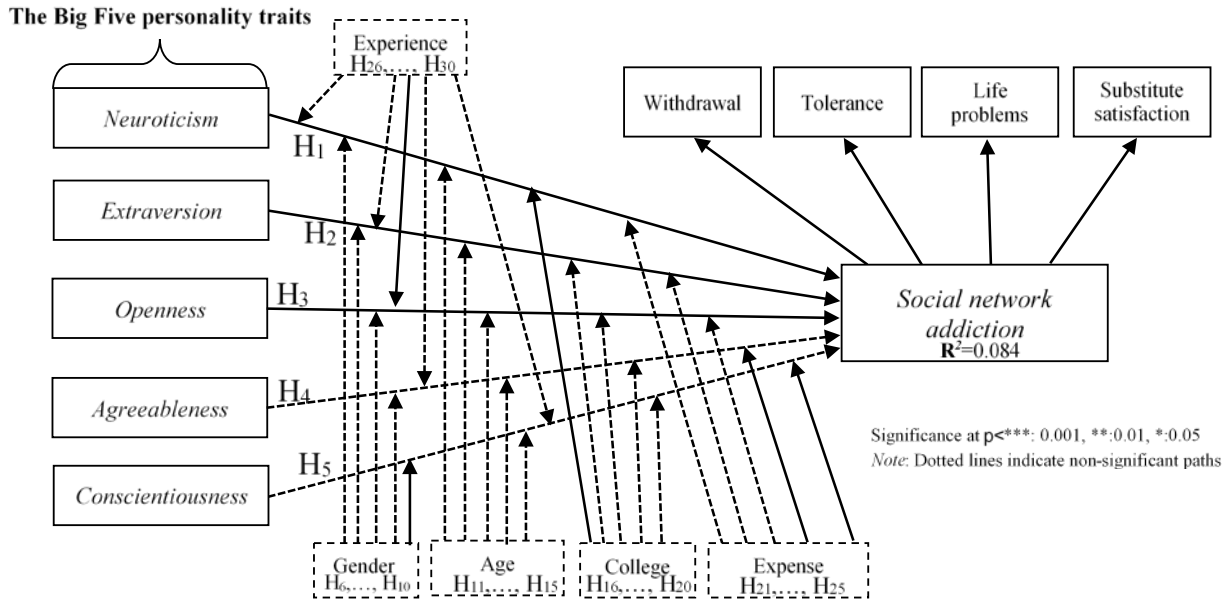


Figure 1. The research model

Table 10: Result of whole model hypotheses test.

Nos.	Independent Variables	Dependent Variables	Moderators	Path Coefficient	Supported
H1	Neuroticism	SMA		-0.244***	Yes
H2	Extraversion	SMA		0.150***	Yes
H3	Openness	SMA		0.182***	Yes
H4	Agreeableness	SMA		0.023	No
H5	Conscientiousness	SMA		-0.038	No
H6	Neuroticism	SMA	Gender	0.032	No
H7	Extraversion	SMA	Gender	0.051	No
H8	Openness	SMA	Gender	-0.013	No
H9	Agreeableness	SMA	Gender	0.026	No
H10	Conscientiousness	SMA	Gender	-0.091*	Yes
H11	Neuroticism	SMA	Age	-0.033	No
H12	Extraversion	SMA	Age	0.011	No
H13	Openness	SMA	Age	-0.021	No
H14	Agreeableness	SMA	Age	-0.067	No
H15	Conscientiousness	SMA	Age	-0.049	No
H16	Neuroticism	SMA	College type	0.090*	Yes
H17	Extraversion	SMA	College type	-0.067	No
H18	Openness	SMA	College type	0.029	No
H19	Agreeableness	SMA	College type	-0.025	No
H20	Conscientiousness	SMA	College type	-0.031	No

H21	Neuroticism	SMA	Expense	-0.065	No
H22	Extraversion	SMA	Expense	-0.013	No
H23	Openness	SMA	Expense	0.041	No
H24	Agreeableness	SMA	Expense	-0.120**	Yes
H25	Conscientiousness	SMA	Expense	-0.243***	Yes
H26	Neuroticism	SMA	Experience	0.054	No
H27	Extraversion	SMA	Experience	0.007	No
H28	Openness	SMA	Experience	0.149**	Yes
H29	Agreeableness	SMA	Experience	-0.072	No
H30	Conscientiousness	SMA	Experience	0.037	No

SMA: Social media Addiction.
Significance at $p < ***: 0.001, **: 0.01, *: 0.05$

The size of the direct effects in the current research model were as follows: neuroticism had the greatest direct effect on social media addiction (-0.244), followed by the direct effect of openness on social media addiction (0.182), and finally extra version on social media addiction (0.150). According to the moderator variables with a significant relationship, the relationship between openness and social media moderated by experience (0.149) had the greatest effect, followed by the relationship between neuroticism and social media moderated by college type (0.090).

5. Discussion

This study attempts to propose a model in order to examine the relationship between the Big Five personality traits and the Social media addiction in a developing country perspective taken into consideration the moderation effects of Gender, Age, College type, Expense and Experience.

The results showed that addiction to social media is negatively affected by the Neuroticism dimension (H1: $\beta = -0.244, p < 0.001$). This result may be due to the neuroticism personality traits' like anxiety, tenseness, worry, insecurity, guilt and emotional instability through putting negative emotions in their experience. Accordingly, neuroticists individuals are less addictive to social media because those with neurotic tendencies are nervous, moody and do not like the routine in general, which causes them to be more active and do not prefer to sit for a long time e.g., on social media. In sum, individuals who are higher in neuroticism avoid the excessive use of social media. This finding is in agreement with Tang et al. [8] who found that addiction to social media e.g., Facebook is affected negatively by the neuroticism personality trait. However, this finding is not consistence with previous research ([5], [68]) and with ([32], [33]) who found out that narcissism and openness individuals tend to be more active on Facebook, reflecting positive attitude associated with the use of SNSs.

The current findings show that addiction to social media is positively affected by the Extraversion dimension (H2: $\beta = 0.150, p < 0.001$). Extraverted individuals are sociable, assertiveness, friendly, talkative, enthusiastic, optimistic,

upbeat and energetic. Accordingly, the extraverted individuals found the social media sites a suitable environment for asserting themselves and meeting their needs and desires. The excessive use of social media for extraverted individuals leads to building virtual relations and friendships and that the real friendships may decrease or disappear. In addition, as the extraverted individuals are sociable and friendly, they have a strong desire to make more and more friends in order to compete between them and their friends to see who have the largest number of friends. This competition leads them to stay long on social media sites to treat with that huge number of friends, which lead them to the addictions. The result obtained here confirms previous conclusions ([19], [28], [29], [30], [31] [36], [72]) and disagree with [68].

The results showed that addiction to social media is positively affected by the Openness dimension (H3: $\beta = 0.182, p < 0.001$). Openness means to be open to untraditional things and ideas, seek novelty, prefer variety, intelligent, imaginative, intellectual curios, and abroad cultural interest. Meanwhile, the openness individuals' like trying new things, and social media sites always contain exciting things and ideas derived from several cultures, new motivations and events. So far, social media have been found to be a suitable place for the openness individuals. Overall, individuals with high openness are tend to use the social media sites heavily; therefore, they are prone to addiction. This result agrees with the previous studies, which revealed that openness is one of those predictors that predicts the usage of social networking sites ([10], [29], [32], [33], [36]). Meanwhile, it is disagrees with ([19], [30], [32]).

However, the result indicates that there is no significant influence between agreeableness and addiction to social media, (H4: $\beta = 0.023, p > 0.05$). Agreeableness means collaboration, altruism, care taking, personal warmth, and concerned with others feeling and needs. Accordingly, the agreeable individuals' prefer to participate with social events face-to-face in order to enhance collaboration with others. In addition, because the agreeable individuals did not see or deal with people face-to-face, they do not prefer to use the social media sites heavily, as a result, they do

not become social media addicts. This result disagrees with [8]. Conversely, agreed with [36].

The result indicates that there is no significant influence between conscientiousness and addiction to social media, (H5: $\beta = -0.038$, $p > 0.05$). This result may be due to the conscientiousness personality traits like responsible, self-disciplined, reliable, stable, achieved, ethical, good planner, organized, hardworking and punctual. Accordingly, conscientious individual will avoid any type of addiction. In other words, to be an addict you need to spend a lot of time on using social media and this is contrary to the characteristics of the conscientiousness individuals. This result agrees with ([30], [36]) However, this result disagrees with ([8], [44]).

In the light of the context of the current study, the results show that gender, age and expense do not significantly have any moderating effects. Obviously, this indicates that they do not lead to variation between the Big Five personality traits and the Social media addiction. As a result, scholars, educators and designers should not focus on gender, age and expense when they want to investigate the underlying reasons for social media addiction between college students in Jordan. Regarding gender, the current finding is consistence with previous research ([8], [10], [45], [46], [47], [48], [49], [60], [61], [70]). However, it is not consistence with ([29], [40], [43], [73], [74], [75]). Regarding age, the current finding is consistence with previous research ([61], [70]). However, it is not consistence with ([29], [32], [36], [60]). Regarding expense, the current finding is consistence with previous research [60].

Regarding the moderating effects of the college type (scientific, humanitarian), the results reveal that there are no significant effects between the personality traits and the social media addiction except the relationship between neuroticism and social media addiction. The result revealed that there is a significant positive effect (H16: $\beta = 0.090$, $p < 0.05$) for individuals who belong to the humanitarian colleges. Without doubt, the nature of humanitarian colleges is more flexible; certainly, individuals who belong to those colleges do not have too many complex duties and requirements compared with those who belong to scientific colleges. Consequently, individuals who belong to the humanitarian colleges are less anxious and worried, so they tend to use and spend more time on the social media more than those who belong to the scientific colleges.

Regarding the moderating effects of the experience, the results reveal that there are no significant effects between the personality traits and the social media addiction except the relationship between openness and social media addiction. The result revealed that there is a significant positive effect (H28: $\beta = 0.149$, $p < 0.01$) for experienced individuals. This means that when an openness individuals gain more and more experience with social media, they tend to spend more time in using it, in order to satisfy their

personality trait like to try new nontraditional things or ideas, therefore, they are more prone to addiction.

6. Conclusions

This study draws the following conclusions. Individuals who tend to be less neurotic, extraverted and openness are likely to use the social media sites heavily; therefore, they are prone to addiction. According to moderating effects, the results show that gender, age and expense do not significantly have any moderating effects on the social media addiction. Regarding the moderating effects of the college type (scientific, humanitarian). The results reveal that there are no significant effect between the personality traits and the social media addiction except the relationship between neuroticism and social media addiction. According to the moderating effects of experience, the results reveal that there is no significant effect between the personality traits and the social media addiction except the relationship between openness and social media addiction, which has a positive effect on experienced individuals. The respondents spend on (Facebook, WhatsApp and YouTube) more than the addiction benchmark distributed on social media functions (chatting, communicating and finding people, browsing news feeds/read the comments of other people, homework achievement and reading ads) respectively. It can be concluded that, the respondents integrate their daily life with their interpersonal relationships by using social media thus, they are prone to addiction. According to diagnosis criteria suggested by the Obsessive Compulsive Foundation; only 7.9% of the participants were classified as social media addicts; however, 62.1% were in the alert group, meanwhile, 30% were in the normal group. Finally, scholars, educators and designers should focus on social media addiction because it has become a critical, severe and growing problem with nearly 70% of compulsive use among respondents in Jordan.

7. Implications, limitations and future studies

7.1 Implications

One important contribution of the current investigation to this field of study is enabling people to conceptualize the relationship between the Big Five personality traits for university students and the social media addiction in a developing country perspective like Jordan. Moreover, the reader is also able to understand how gender, age, college type, expense and experience of individuals can affect the SNS addiction. In addition, the proposed model and study instrument would facilitate the comparison of the results from other studies and allow other researchers to incorporate other variables that practically fit in the

Jordanian culture and environment. From another perspective, the obtained results present a motivation for decision makers and administrators to pay more attention to the way that the mobile phones, smartphones and SNS are used. Indeed, the obtained results can be a direction for their plans and strategies that can guide the individuals to the right way of usage in order to avoid the excessive use of SNS, and help them to achieve value from SNS. Lastly, the developers and administrators of the SNS can use such outcomes to update and modify their SNS features and functionalities in such a way that support the development of societies and countries.

7.2 Limitations and future works

The current investigation overcame some of the limitations that may have affected the results of the current study. Firstly, the population of this study is students from one university in Jordan. In fact, SNS usage is not limited to certain age- over 18 for example- thus, generalization would be more appropriate with further samples than other ages in future studies e.g. high and elementary schools. Secondly, the addiction to the SNS has been represented and measured mainly by the number of hours spend on SNS per day. However, a more precise basis for SNS addiction such as the nature of use and the performed activities on SNS, and so on, can be more useful in representing SNS addiction. Thirdly, actual test for the time spent on using SNS rather than asking the participants can be helpful in avoiding the potential errors that might be resulted due to subjective evaluations that have been adopted in the current study. Accordingly, additional researches could establish clear-cut criteria for identifying SNS addiction. Fourthly, this study is limited to correlate the SNS addiction concept to the personal characters of university students and was not concerned about the clinical side. Hopefully, others can come up with an instrument to screen the addicts to the SNS in order to help them budget their time and improve their academic performance. Finally, other important and contemporary aspects can be investigated in the future such as privacy protection, perceived trust, perceived risk, perceived quality of services, and cultural issues.

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