Deanship of Scientific Research

The Mediating Effect of Social Media Use on the Relationship between Personality Trait and Gambling behavior among University Students in Northern Cyprus

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Abstract

Objectives: This paper aims to investigate the relationship between personality traits, gambling behavior, and social media use.

Methods: A questionnaire comprised of the Five-Factor Model (Costa & McCrae, 1992), the Gambling Behavior Scale by Jeff and Gregory (2010) and the Social Networking Time Use Scale (Olufadi, 2015) was administered to 718 students in Northern Cyprus. Pearson's correlation and multiple linear regression analysis were carried out to test if the five personality traits have a significant positive relationship with gambling behavior.

Results: Data analysis showed a significant positive relationship between social media use and gambling behavior. The study reported that while the relationship between three personality traits (extraversion, neuroticism, and openness to experience) and gambling behavior is partially mediated by social media use, the relationship between agreeableness as a personality trait and gambling behavior is not mediated by social media use. Finally, findings showed that the impact of conscientiousness on gambling behavior is influenced by the frequency and time spent on social media.

Conclusions: In light of the reported impact of personality traits on gambling behavior, further research should seek to find out what it is about social media that encourages gambling behavior, and what combination of factors is most likely to force social media users to part with money to play or gamble. Finally, different motivations for social media use can be tested as moderators in the relationship between personality traits and gambling behavior.

Keywords: Gambling behavior, personality trait, social media use, five-factor model.

استخدام وسائل التواصل الاجتماعي وسيطا مؤثرا في العلاقة بين سمات الشخصية وسلوك المقامر عند طلاب الجامعات في شمال قبرص

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ملخّص

الأهداف: يهدف البحث إلى دراسة أثر سمات الشخصية على سلوك المقامرة بين طلاب الجامعة. كما يسعى إلى استكشاف أثر استخدام وسائل التواصل الاجتماعي كوسيط مؤثر في العلاقة بين سمات الشخصية وسلوك المقامر عند طلاب الجامعات.

المنهجية: بهدف استكشاف أبعاد هذا التأثير ومتغيّراته، جرى تصميم استبانة تتبنّى نموذج العوامل الخمسة Costa & McCrae, 1992)) ومقياسَ سلوك المقامرة بواسطة (Jeff and Gregory,2010) ومقياسَ وقت استخدام الشبكات الاجتماعي (Olufadi, 2015)على التوالي. ونُفَذت على عيّنة مكونة من 718 طالبًا جامعيًا في شمال قبرص، وجرى تحليل معامل ارتباط بيرسون وتحليل معامل الانحدار الخطي المتعدد لاختبار أثر سمات الشخصية الخمس على سلوك المقامرة .

النتائج: أظهرت النتائج وجود علاقة إيجابية كبيرة بين استخدام وسائل التواصل الاجتماعي وسلوك المقامرة. وأظهرت الدراسة أنه في حين أن العلاقة بين سلوك المقامرة وبين ثلاث سمات شخصية (الانبساط ، العصابية ، الانفتاح على التجربة) يتحقق على نحو جزئي من خلال استخدام وسائل التواصل الاجتماعي بين المشاركين، في حين أنّ العلاقة بين القبول على المستوى الشخصي وسلوك المقامرة لا تتحقق من خلال استخدام وسائل التواصل الاجتماعي. وأخيرا ، أظهرت النتائج أن تأثير الضمير على سلوك المقامرة يتأثر في عدد المرات وبالوقت الذي يقضيه في استعمال وسائل التواصل الاجتماعي.

التوصيات: بالنظر إلى أثر سمات الشخصية على سلوك المقامرة توصي الدراسة بمزيد من الدراسات التي تسعى إلى تحديد أبعاد تشجيع وسائل التواصل الاجتماعي على سلوك المقامرة ، وتحديد العوامل التي قد تغري مستخدمي وسائل التواصل الاجتماعي بالتخلي عن المال للعب أو المقامرة.

الكلمات الدالة: سلوك المقامرة، سمة الشخصية، استخدام وسائل التواصل الاجتماعي، نموذج العوامل الخمسة.

Introduction

Gambling is considered an Impulse Control Disorder according to APA (2013). It is a diagnosable mental disorder when evidence shows a loss of control over gambling and money spent on gambling activities, a loss of control over time, and a complete disregard for the consequences of gambling regularly. While gambling is considered a pastime in many cultures and is not necessarily seen as a major problem, when it becomes compulsive and starts affecting other aspects of one's life, like the ability to create social bonds, keeping in touch with friends and family, keeping the home front, the ability to hold down a job, and many others, then it can be categorized as problem gambling or pathological gambling, which is not desirable and not socially acceptable in most parts of the world. According to the DSM-5 Diagnostic Criteria on Gambling Disorder as stated in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, a gambling disorder can be diagnosed in an individual if they exhibit four or more of the following within 12 months:

1.   Needs to gamble with increasing amounts of money to achieve the desired excitement.
2.   Is restless or irritable when attempting to cut down or stop gambling.
3.   Has made repeated unsuccessful efforts to control, cut back, or stop gambling.
4.   Is often preoccupied with gambling (e.g., having persistent thoughts of reliving past gambling experiences, planning the next venture, thinking of ways to get money with which to gamble).
5.   Often gambles when feeling distressed (e.g., helpless, guilty, anxious, depressed).
6.   After losing money gambling, often returns another day to get even ("chasing" one's losses).
7.   Lies to conceal the extent of involvement with gambling.
8.   Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling.
9.   Relies on others to provide money to relieve desperate financial situations caused by gambling.

The internet has only created more opportunities for people to indulge in their gambling activities via online gambling platforms. Sports gambling, Blackjack, and other card games are increasingly available on the internet and allow users to place a bet, play against, and with other players for money. As a result, social media users are now more exposed to gambling content than ever before, and this trend is growing exponentially on a global scale (Caladao, Alexandre & Griffiths, 2016). A cursory look at mobile games, that market themselves as Freemiums, shows that they include elements of gambling (Kim et al., 2016), for instance, a simple game of Candy Crush requires completing a simple task in a predefined number of moves. Sometimes, players are not able to achieve this objective before running out of moves and are forced to pay money to get new moves. By paying money, the players are gambling that they will be able to complete the game with the extra moves they will be given, if after paying they still do not win the game, then they have the option of spending even more money or abandoning the game completely. This is very close to the reality of traditional gambling, where users stake money and keep staking money, hoping that the next gamble will pay off. Furthermore, apart from gambling and gaming platforms, the internet also provides a social environment for gamblers and gamers to interact with themselves through in-game interaction tools.

A review of the available literature shows that different studies have been carried out to understand the relationship between personality traits and gambling behavior. Gambling behavior has been associated with individual factors such as cognitive distortions (Myrseth et al., 2010), reinforcement sensitivity and learning (Brunborg et al., 2016), and motivational factors such as attitudes, knowledge, and intentions (Hanss, et al., 2014). However, comprehensive research on the mediating role of social media usage on this relationship remains scarce. From atheoretical perspective, this study shall make use of the Big-Five Traits, which include neuroticism, agreeableness, conscientiousness, openness, and extraversion, when measuring personality traits.

In light of the above, this study aims to explore whether personality traits significantly predict gambling behavior, examine the relationship between social media use and gambling behavior, and understand the mediating role of social media usage in the relationship between personality traits and gambling behavior among university students in Northern Cyprus.

Gambling Industry in Northern Cyprus

Northern Cyprus is part of the Island of Cyprus that has been divided since 1974 when the Turkish Cypriots declared their independence from the South. The Turkish Republic of Northern Cyprus is not recognized by any country except for Turkey and its economy is directly tied to that of Turkey. TRNC is considered the gambling business center of Cyprus. One thing that has made it a lucrative business in the country is the fact that gambling is banned in Turkey and therefore the closest place to enjoy a poker game for most Turks, is Northern Cyprus. Also, Northern Cyprus attracts a lot of European tourists which has only boosted the local casino and tourism industry and has solidified its position as one of the most popular gambling and tourism destinations in the Mediterranean. According to Slotegrator.pro, there are 30 casinos and numerous sports betting establishments in the country.

Northern Cyprus is also home to several universities, all of which are privately owned except for Eastern Mediterranean University, METU-NCC, and ITU-TRNC which are state-owned. The island is home to 19 universities and as of 2014, these universities attracted a combined 70,004 students with over 18,600 of them being international students. According to a BBC (2019) report, there are over 120,000 students in North Cyprus. This implies that university students make up almost 30% of the total population of the small country.

This makes the Turkish Republic of Northern Cyprus an ideal study area and the students, a suitable study population for a study that seeks to find out the relationship between personality traits and gambling behavior among university students in Northern Cyprus.

Theoretical Perspective: Five-Factor Model of Personality

The Five-Factor Model (FFM) of personality argues that the differences in human behavior or personality can be explained within the five dimensions of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (Costa & McCrae, 1992). Each of these dimensions is made of more specific facets that help measure the broader dimensions. Neuroticism, for instance, is further broken down into, anxiety, anger, depression, self-consciousness, immoderation, and vulnerability. People that score high on this trait are usually nervous and have anxiety issues. They are usually described as being ill-tempered and difficult to be friends with. It has also been observed that individuals with this personality trait also tend to suffer from depression and are very self-conscious and are sensitive to criticism. They also tend to have a difficult time coping with stressful situations or environments. Piedmonth (1998) explains that people that score high on this personality trait would be, "... prone to experiencing psychological distress, unrealistic ideas, excessive cravings or urges, and maladaptive coping responses" (p. 84).

Extraversion is broken down into, friendliness, gregariousness, assertiveness, activity level, excitement-seeking, and cheerfulness. Individuals that score high within this personality trait are described as being cordial, friendly, and very sociable. They are considered natural-born leaders that can easily handle situations as they come up. Those that score high under the activity, excitement, and positive emotions (facets of extraversion) tend to lead an eventful life, are thrill-seekers, and are not scared to engage in risky activities.

Openness to experience is further broken down into imagination, artistic interest, emotionality, adventurousness, intellect, and liberalism. Those who score high on the fantasy (imagination) facet tend to be daydreamers and have a very active imagination. Those that score high on the artistic facet are described as people with a strong appreciation of art and beauty. Individuals that gravitate towards emotionality have/show strong feelings that they consider an important part of their lives. Adventurous individuals will try new things and are not scared to eat new foods or engage in activities they have never engaged in before. Individuals that score high on intellect are generally open to ideas and are interested in knowledge and learning new things. Those scoring high on liberalism generally tend to have liberal values. In total, individuals scoring high on openness to experience can be described as creative, original, artistic and are willing to explore new areas. Conversely, those that score low on this trait are less willing to experience new things and are less creative.

Agreeableness is further categorized into, trust, morality, altruism, cooperation, modesty, and sympathy. Individuals that fall under this category are generally described as very trusting of others and expect people to be straightforward and not deceitful. These individuals are also honest and tend to be very trustworthy. They love to help others and are not selfish.

Since they are usually meek and humble, they tend to leave the decision-making to others and are very modest when judging their abilities. They tend to have a high level of empathy and compassion towards other people.

Finally, conscientiousness is broken down into, self-efficacy, orderliness, dutifulness, achievement-striving, self-discipline, and cautiousness. Individuals that score high in this trait have a strong opinion of themselves and think they are competent and very organized. They are dutiful and have a strong feeling of obligation to their job and are motivated to succeed in anything they do. They are deliberate and make plans in advance. People that score high in this trait can be relied upon. On the other hand, people that score low in this trait tend to be careless and highly irresponsible.

Previous studies

The Five-Factor Model (Costa & McCrae, 1992) dimensions indicate individual differences in actions, behaviors, thoughts, and feelings and might be key to understanding gambling behavior. A study by Smith et al. (2007) showed that sensation-seeking is positively related to the frequency of gambling among university students. Multiple studies over the years have looked at the relationship between personality, as categorized by the Five-Factor Model and gambling behavior. Findings generally agree that adult gamblers share certain traits, high neuroticism, low agreeableness, and low conscientiousness (MacLaren et al., 2011).

Slutske et al. (2005) carried out a longitudinal study to examine how different personality traits explain the risk for disordered gambling behavior and if such traits resemble those of other substance-related addictive disorders. They also explored the possibility of different personality traits to predict the comorbidity among different addictive disorders. A multidimensional personality questionnaire was administered to 1973 participants at the age of 18, and a structured interview was obtained from the same participants at the age of 21. Findings showed that problem gambling was significantly correlated with indicators of risk taking and impulsivity. The personality traits associated with gambling were similar to the traits associated with other addictive disorders like alcohol independence. The researchers pointed to the difficulty to reach a conclusion regarding the relationship between personality traits and gambling behavior due to limitations in literature. Based on this premise, the current study aims to further the research on this relationship.

Using the Five-Factor Model of Personality, Bagby et al. (2007) aimed to investigate the personality differences between non-treatment seeking pathological gamblers (PGs) and non-pathological gamblers (NGPs). Findings showed that PGs had significantly higher levels of neuroticism and impulsiveness and lower levels of conscientiousness, self-discipline, and deliberation when compared to NGPs. Findings further revealed that excitement seeking is not a specific characteristic of pathological gambling, but a marker that characterizes all different types of gamblers.

Miller, et al. (2013) explored the degree to which pathological gamblers share certain personality traits using a semi-structured interview with 35 participants. Findings showed that personality traits related to strong negative emotions were the most significant correlates to pathological gambling. The authors highlighted the fact that gender, age, and race were significant moderators between personality traits and pathological gambling and recommended that future research investigate potential important moderators of this relationship, an aim that this study shall achieve.

In their paper "A Personality-Based Latent Class Analysis of Emerging Adult Gamblers", Tackett et al. (2015) explained that the increasing number of gambling establishments has resulted in a higher tendency to gamble among young adults including college students. Using latent class analysis, the study proceeded by exploring the correlation between personality traits, gambling behavior and gambling motives. Two personality traits (agreeableness and conscientiousness) were negatively associated with markers of gambling behavior. The correlations between personality attributes and gambling motives may reflect potential heterogeneity among college students who gamble. Thus, the current study shall test the potential to generalize those results to college gamblers.

A study carried out by Vachon and Bagby (2009) divided gamblers into different groups based on their personality traits. The findings showed that hedonic gamblers scored very high on extraversion and openness, while demoralized gamblers scored high on neuroticism. Another study carried out among college students found out that resilient gamblers scored the highest on extraversion, self-control, and openness, while vulnerable gamblers scored lowest on these same traits (Tackeett et al., 2015, as cited in Reardon et al. 2018).

From the foregoing, scholars have recognized the relationship between personality traits and gambling behavior. However, there is a dearth of literature focusing on Northern Cyprus which is home to one of the highest numbers of casinos per capita in the world. Moreover, scholars have pointed out to the paucity of relevant studies on the impact of social media use on gambling behavior especially those focusing on university students' gambling behavior.

Studies have also shown that the prevalence of gambling problems can be further differentiated based on gender. Numerous studies have shown that males are more likely to have gambling issues than females (Splevins et al., 2010; Calado et al., 2017). Stoletenberg et al. (2007) concluded in their study that men have a higher level of engagement and gambling problems than women. In a large-scale study carried out in the US, which made use of telephone surveys, it was found out that men gambled more frequently and were significantly more likely to make large losses and wins (Welte et al., 2008). Findings have also suggested that women were 50% less likely to be problem gamblers. A study by Winters et al. (1998) found out that 91% of college men and 84% of college women had reported having gambled at least once in the last year. Out of these numbers, 14% of men had gambled at problematic levels while only 3% of women had gambled at this level.

Based on the previous literature looking at the gender differences in gambling problems and the relationship between personality traits and gambling problems, the following hypotheses are to be tested:

H_1: there is a significant relationship between personality traits and gambling behavior among university students in Northern Cyprus.

H_2: there is a significant difference in gambling behavior between male and female students in Northern Cyprus.

Wohl et al. (2017), stated that the growth and ubiquity of social media platforms, such as Facebook, Twitter, YouTube, Instagram, TikTok, etc., has led to an exponential increase in social gaming applications. These applications are some of the top-rated apps and are very lucrative (Takahashi, 2013). Games like Slotomania, Zynga Poker are some of the highest-grossing games on Facebook and their popularity only seems to be increasing as the years progress. The secret to their popularity appears to be linked to the Freemium nature of the games; Freemium in the sense that players do not pay money for the initial download and access and are gradually reeled in to spend real money as they progress in their use of the game application. According to Statista (2020), social casino games generated over 6 billion USD in revenues in 2017 alone. The lucrativeness of online gaming has attracted the gambling industry which has led to gambling operators purchasing, merging, or partnering with social casino gambling operators (Sapsted, 2013). Due to the convergence of social casino games and gambling, there is a justifiable concern about the relationship between social media gaming and gambling addiction. Numerous studies have shown that online gambling games can be seen as a training ground for budding gamblers which contributes to the prevalence and maintenance of gambling problems or pathological gambling (Gainsbury, et al., 2015; Griffiths, et al., 2012; Kim et al., 2015; King, et al., 2014; Parke et al., 2013). A study by Gainsbury et al. (2016) pointed to the paucity of relevant studies on the impact of social media on gambling behavior. The authors investigated this phenomenon by targeting vulnerable users who were experiencing gambling problems at the time. A total sample size of 964 was used for the study which involved the use of surveys to assess their exposure to gambling operators online, the severity of their gambling addiction, and the impact of social media promotions on their gambling. Their findings showed that moderate and problem gamblers were significantly more likely to actively engage with online gambling operators via social media. These categories of individuals are also more likely to increase their gambling as a direct result of their exposure to online gambling promotions. Over 30% of the respondents in this study indicated that online gambling promotions have only led to an increase in their gambling problems and addiction.

On the other hand, there is also evidence that online gambling and social media can help reduce the prevalence and maintenance of gambling disorder (Hollingshead et al., 2016; LaPlante & Shaffer, 2007; Oman et al., 2004).

From the foregoing, it appears that there is no consensus on the role of social media or online gaming on the prevalence of gambling disorder among university students. This, therefore, leads to the following hypotheses:

H_3: social media usage among university students in Northern Cyprus is positively associated with gambling behavior.

H_4: the relationship between personality traits and gambling behavior is mediated by social media use among university

students in Northern Cyprus.

Personality traits and gambling behavior among university students in Northern Cyprus

The current study looks at the relationship between personality traits and gambling behavior among university students in Northern Cyprus. Northern Cyprus was selected for the study because of the high prevalence of casinos, sports betting, and other forms of gambling activity in the small island. The country is a breakaway region of Cyprus and as such has had to rely on the educational sector and the hospitality industry for sustenance. It is therefore assumed that this situation has forced them to have a more relaxed approach to gambling and casino business than in the Greek side and Turkey. A major part of the country's population is students from all over the world which makes it an ideal location to study the relationship between personality traits and gambling behavior among university students since all the variables needed to conclude are actively present in the island. Also, internet services are widely available at an affordable price making it likely that most university students in Northern Cyprus will have access to social media and other internet services.

This study conceptualized personality traits using the NEO Five-Factor Inventory. Correlations between personality traits and gambling behavior were measured, also, correlations between social media and gambling behavior were measured, then a moderator multiple regression analysis was carried out to find out whether or not social media is a moderating factor on the relationship between personality traits and gambling behavior.

Methods

Participants

The sample consisted of students from 3 Universities in Northern Cyprus- Eastern Mediterranean University (EMU), Girne American University (GAU), and Cyprus International University (CIU). These three universities were chosen because of their proximity to casinos and gambling establishments in the island. Purposive sampling was used to make sure that the participants in the study had access to both gambling venues as well as social media platforms. In total, the questionnaire was administered to 718 students: 246 students from EMU, 255 students from GAU, and 217 students from CIU. 58% of the 718 students were male while the remaining 42% were female. Their ages ranged from 18- 31 years of age with a mean age of 23.70 years. The mean age of men and women were similar at 23.51 (SD-1.31) and 23.77 (SD=1.95) years, respectively. The participants can also be further divided based on their nationality. Of the 718 students, 378 are Africans, 168 are from the Middle East and Asia, 28 are from Europe, and the remaining are from Turkey and other Eurasian nations.

Potential participants were first asked to answer two probing questions; Do you know of any gambling or sports betting establishment around you? Do you make use of social media? Anyone that answers "No" to any of the questions was removed from the pool of potential respondents.

Questionnaires were physically filled. Research assistants were asked to distribute the questionnaires to students on campus at the three institutions identified for this study. The breakdown of the distribution is detailed in the table below:

Table 1. Sample size distribution

S/N	Institution	Sample size
1	Girne American University	255
2	Eastern Mediterranean University	246
3	Cyprus International University	217
Total		**718**

Those that were eventually asked to complete the questionnaire were informed about their right to opt-out of the study at any time and that all information provided would be used only for the study and their names and other personal information will not be compromised.

Measures

Three scales were used to collect data for this study:

The NEO Five Factor Inventory (Costa & McCrae, 1992) is a 60-item self-report instrument that is used to measure the

five personality domains, namely, neuroticism, extraversion, openness, agreeableness, and conscientiousness. Each of these domains has 12 items in the questionnaire. The NEO FFI tool has statements that the participants are expected to respond to on a scale of 1-5 with 1 being "Strongly Disagree" and 5 being "Strongly Agree". Scores for each domain are calculated by adding up the responses of the 12 items.

To measure gambling behavior, the Gambling Behavior Scale by Jeff and Gregory (2010) was used. This is a 16-item rating scale and was developed to measure patterns and prevalence of gambling behaviors among a study sample. The scale makes use of a 4-point scale ranging from A to D, with A being "Not at all" and D being "Once in a While". By using this scale, this study sought to confirm the prevalence of gambling behavior among university students in Northern Cyprus and to compare this prevalence across different characteristics such as gender and personality traits.

Finally, to measure social media usage, the Social Networking Time Use Scale (SONTUS) was used. It was used to measure the time spent on social media by the participants. The SONTUS is a 29-item instrument and makes use of 10 personality and well-being measures, and 2 theoretically related constructs to provide preliminary evidence for the convergent, predictive, and discriminant validity of SONTUS (Olufadi, 2016, p. 452). The SONTUS questionnaire is made up of two sections – demographic and SNSs use). The demographic section collects information regarding gender, ethnicity, educational level, monthly income, work status, employment type and the number of SNS accounts owned. Marital status and religion were removed in this study since they are not particularly relevant to the study. The second section (SNSs use) presents questions respondents are required to answer using a scale of 1- 11, with 1 being "Not applicable to me during the past week" and 11 being "I used it more than 3 times during the past week; but spent more than 30 minutes each time" (Olufadi, 2015).

Findings and Discussion

H$_1$: there is a significant relationship between personality traits and gambling behavior among university students in Northern Cyprus.

To test this hypothesis, a Pearson's Correlation test was carried out to find out the relationship between personality traits as developed by Costa and McCrae (1992) and the gambling behavior among university students in Northern Cyprus. The results of the test (See Table 1 below) showed that there is a significant relationship between personality traits and gambling behavior.

Table 1. Correlation between different personality (FFM) traits and gambling behavior

Variable	Gambling behavior	p-value
Extraversion	.405**	< .01
Agreeableness	.419**	< .01
Conscientiousness	.095*	< .05
Neuroticism	.356**	< .01
Openness to experience	.328**	< .01

In summary Table 1 reports the Pearson Correlation Coefficients between personality traits and gambling behavior. The relationship between each of the subsets and gambling behavior was tested. The results showed that Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience with a correlation of 0.405, 0.419, 0.356, and 0.328 respectively, have a significant positive relationship with gambling behavior (p-value < 0.05). This suggests a moderate positive linear relationship between Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience and gambling behavior. In other words, university students with certain personality traits are more likely to engage in gambling behavior and develop gambling problems. Therefore, H$_1$ is accepted.

H$_2$: there is a significant difference in gambling behavior between male and female students in Northern Cyprus.

To test this hypothesis, an independent sample t-Test was carried out comparing the gambling behavior of university

students based on their genders. The results as depicted in Table 2 below showed that males are more likely to engage in gambling behavior than females.

Table 2. Comparing the males and females on gambling behavior/frequency

Variable		Females (n=324)	Males (n=394)	*t*-value	P
Gambling	M	12.6	18.5	-6.2	<.001
behavior	SD	(8.1)	(16.9)		

In summary, the result of the analysis showed that males scored higher than females on the gambling behavior scale, and the difference was large enough to be statistically significant ($t = -6.2$, $p < .01$). Therefore, H_2 is accepted. From the foregoing, it is clear that male university students in Northern Cyprus have a higher propensity to engage in gambling behavior than their female counterparts.

H₃: social media usage among university students in Northern Cyprus is positively associated with gambling behavior.

To test this hypothesis, a Pearson's Correlation Coefficient test was carried out to find out the relationship between social media usage and gambling behavior among university students. The findings, as shown in Table 3 below, showed that there is indeed a relationship between the two variables.

Table 3. Correlation between social media use and gambling behavior

Variable	Gambling behavior	p-value
Social Media use	.316**	< .01

In summary, the result showed a significant positive relationship between *social media use and gambling behavior* (r = .316, *p* < .01), suggesting that heavy social media users tend to gamble more. It can be deduced that the more time spent on social media, the higher the likelihood of such an individual engaging in gambling behavior. Therefore, H_3 is accepted.

H₄: the relationship between personality traits and gambling behavior is mediated by social media use among university students in Northern Cyprus.

Table 4 shows the correlational matrix among the variables and table 5 explains the mediated regression coefficient summary.

Table 4. Correlation matrix of all the predictors and outcome variables (n=718).

	EXT	AGR	CON	OPE	NEU	SMU
AGR	.118**					
CON	.258**	.086*				
OPE	.725**	.141**	.307**			
NEU	.648**	.151**	.191**	.603**		
SMU	.567**	.138**	.171**	.482**	.426**	
GB	.405**	.419**	.095*	.328**	.356**	.316**

**p < 0.01, *p < 0.05 EXT* = Extraversion, *AGR*= Agreeableness, *CON* = Conscientiousness, *OPE*= Openness to experience, *NEU*= Neuroticism, *SMU*= Social Media Use, *GB*= Gambling behavior

Table 5. Mediated Multiple Linear regression coefficients

Independent variables	Dependent variable			
	B(SE)	β	T	P
(Constant)	.457(.108)		4.244	.000
Extraversion	.568(.070)	.333	8.066	.000
Social Media Use	.216(.070)	.127	3.077	.002
(Constant)	.605(.104)		5.812	.000
Neuroticism	.530(.074)	.271	7.159	.000
Social Media Use	.340(.064)	.200	5.282	.000
(Constant)	.599(.098)		6.132	.000
Agreeableness	.188(.016)	.383	11.658	.000
Social Media Use	.446(.056)	.263	7.998	.000
(Constant)	.711(.111)		6.375	.000
Conscientiousness	.050(.043)	.042	1.177	.239
Social Media Use	.524(.061)	.308	8.572	.000
(Constant)	.713(.103)		6.888	.000
Openness to experience	.510(.088)	.229	5.784	.000
Social Media use	.349(.067)	.205	5.185	.000

a. Dependent Variable: Gambling behavior

After testing for the assumptions, Baron and Kenny's (1986) approach to mediation analysis was used to investigate if the relationship between personality traits (Extraversion, Openness to experience, Neuroticism, Agreeableness, and Conscientiousness) and gambling behavior is mediated by social media use among university students in Northern Cyprus.

Scatterplot of standardized residuals showed that the data met the assumptions of homogeneity of variance and linearity. The residuals were approximately normally distributed with no significant outliers. Variance inflation factor (VIF) values for each predictor variable were checked, for multicollinearity, and no VIF values were observed to be more than 10. There was no significant multicollinearity among the predictor variables.

Extraversion

In the first step of the mediation model, the regression of gambling behavior total scores on personality subscale total scores for extraversion, ignoring the mediator, was significant, $b = .690$, $t(717) = 11.8$, $p < .001$. The second step showed that the regression of the mediator, social media use, on the personality subscale total scores for extraversion, was also significant, $b = .569$, $t(717) = 18.4$, $p < .001$. The third step of the mediation process showed that the mediator, social media use, controlling for the extraversion scores, was significant, $b = .216$, $t(717) = 3.08$, $p = .002$. The fourth step of the analyses revealed that the mediator, social media use, controlling for extraversion scores was still a significant predictor of gambling behavior, $b = .568$, $t(717) = 8.07$, $p < .001$. However, a Sobel test was conducted, to test the significance of the total effect, and found partial mediation in the model ($z = 2.97$, 004, $p < .01$). Therefore, the relationship between extraversion and gambling behavior is partially mediated by social media use among university students in Northern Cyprus.

Agreeableness

In Step 1 of the mediation model, the regression of gambling behavior total scores on personality subscale total scores

for agreeableness, ignoring the mediator, was significant, $b = .206$, $t(717) = 12.4$, $p < .001$. Step 2 showed that the regression of the mediator, social media use, on the personality subscale total scores for agreeableness, was also significant, $b = .04$, $t(717) = 3.74$, $p < .001$. Step 3 of the mediation process showed that the mediator, social media use, controlling for the agreeableness scores, was significant, $b = .446$, $t(717) = 8.0$, $p < .001$. Step 4 of the analyses revealed that controlling for the mediator, social media use, agreeableness scores were still a significant predictor of gambling behavior, $b = .188$, $t(717) = 11.7$, $p < .001$.

However, a Sobel test was conducted and found no significant mediation in the model ($z = 1.13$, .002, $p = .0258$). Thus, the relationship between agreeableness and gambling behavior is not mediated by social media use.

Neuroticism

In Step 1 of the mediation model, the regression of gambling behavior total scores on personality subscale total scores for Neuroticism, ignoring the mediator, was significant, $b = .697$, $t(717) = 10.2$, $p < .001$. Step 2 showed that the regression of the mediator, social media use, on the personality subscale total scores for Neuroticism, was also significant, $b = .490$, $t(717) = 12.6$, $p < .001$. Step 3 of the mediation process showed that the mediator, social media use, controlling for the Neuroticism scores, was significant, $b = .340$, $t(717) = 5.3$, $p < .001$. Step 4 of the analyses revealed that controlling for the mediator, social media use, Neuroticism scores were still a significant predictor of gambling behavior, $b = .530$, $t(717) = 7.2$, $p < .001$. Sobel test found partial mediation in the model ($z = 4.88$, .03, $p < .001$).

Openness to experience

In Step 1 of the mediation model, the regression of gambling behavior total scores on personality subscale total scores for Openness to experience, ignoring the mediator, was significant, $b = .731$, $t(717) = 9.3$, $p < .001$. Step 2 showed that the regression of the mediator, social media use, on the personality subscale total scores for Openness to experience, was also significant, $b = .632$, $t(717) = 14.7$, $p < .001$. Step 3 of the mediation process showed that the mediator, social media use, controlling for the Openness to experience scores, was significant, $b = .349$, $t(717) = 5.2$, $p < .001$. Step 4 of the analyses revealed that controlling for the mediator, social media use, Openness to experience scores was still a significant predictor of gambling behavior, $b = .510$, $t(717) = 5.7$, $p < .001$. Sobel test found partial mediation in the model ($z = 4.90$, .04, $p < .001$).

Conscientiousness

In Step 1 of the mediation model, the regression of gambling behavior total scores on personality subscale total scores for Conscientiousness, ignoring the mediator, was significant, $b = .113$, $t(717) = 2.6$, $p < .05$. Step 2 showed that the regression of the mediator, social media use, on the personality subscale total scores for Conscientiousness, was also significant, $b = .120$, $t(717) = 4.6$, $p < .001$. Step 3 of the mediation process showed that the mediator, social media use, controlling for the Conscientiousness scores, was significant, $b = .524$, $t(717) = 8.6$, $p < .001$. Step 4 of the analyses revealed that controlling for the mediator, social media use, Conscientiousness scores did not significantly predict gambling behavior, $b = .05$, $t(717) = 1.2$, $p . = .239$. However, a Sobel test was conducted and the result showed a total mediation in the model ($z = 2.6$, .002, $p < .01$). Thus, the relationship between Conscientiousness and gambling behavior was mediated by social media use. This means that Conscientiousness influence on gambling behavior is influenced by the frequency and time spent on social media.

The findings of the fourth hypothesis show that social media mediates the relationship between personality traits and gambling behavior. However, agreeableness, while significantly related to gambling behavior is not mediated in any way by the frequency of use or time spent on social media. All other personality traits were partially/fully mediated by social media usage and time spent on social media. It can therefore be concluded that H₄ is partially supported.

Discussion

The findings of the first hypothesis showed that individuals with moderate to high neuroticism, extraversion, agreeableness, openness to experience, and low conscientiousness are likely to gamble more frequently. This partially supports the findings of Tackett et al. (2015), Miller et al. (2013), and MacLaren et al. (2011) who found out that adult gamblers generally have certain traits which are high neuroticism, low agreeableness, and low conscientiousness. Our findings deviate significantly from these studies in that the participants in this study who self-reported that they gambled frequently have gambling problems or are likely to develop gambling problems scored moderately on all personality traits except for conscientiousness, where they scored low. It should, however, be noted that the studies reviewed did not target university students, and perhaps, this explains the slight difference in the outcome. A more substantial and comparative study might be needed to confirm that the behavioral traits in university-age gamblers are different from those of older adult gamblers.

The findings completely support those of Smith et al. (2007) who found out that sensation-seeking individuals who can be considered as having extraversion traits, are positively related to frequency of gambling. The implication is that people that share this particular trait are significantly more likely to gamble more than those that do not. Our findings arrive at a similar conclusion in that it shows that extraversion and agreeableness are the two most likely traits to be associated with frequent gambling and gambling behavior. People with the agreeableness trait are not known for taking risk, but are more easily manipulated and pressured into doing things they might otherwise find disconcerting. So, this is a possible explanation why university students with this trait might be most likely to engage in gambling behavior since the peer pressure factor might be playing a considerable role in their decision.

Similarly, the findings of this study partially support those by Vachon and Bagby (2009) who found out that hedonic gamblers score very high on extraversion and openness. The findings show that participants in this study that self-report having gambling problems do not necessarily score very high on these two traits, they score moderately high on both, showing that both traits are important predictors of gambling behavior among university students in Northern Cyprus.

The findings of the second hypothesis support conclusions arrived at in studies carried out by Welte et al. (2008), Splevins et al. (2010), and Calado et al. (2017) who found out in their different studies that males are significantly more likely to engage in gambling behavior and to develop gambling problems than females. Studies specifically targeting university students also arrived at the same conclusion that females were significantly less likely to engage in this behavior than males (Winters et al., 1998). While gender can differentiate the different propensity of gambling behavior among both genders, more studies that shed light on why males are more likely to engage in risky behavior such as gambling are needed.

The findings of the third hypothesis support those by Parke et al. (2013), King et al. (2014), Kim et al. (2015), and Gainsbury et al. (2015) who surmised that social media and online gambling games are training grounds for budding gamblers and lead to an increase in gambling problems. Sapsted (2013) suggested that the convergence of social casino games and gambling has led to an increase in gambling addiction. Northern Cyprus is a country with very reliable and constant internet and lot of casinos with both online and offline gambling. This, perhaps, explains the increasing prevalence of gambling activities among university students in the small Cypriot island.

Our findings, however, go against those by LaPlante and Shaffer (2007) and Hollingshead et al. (2016) who suggested that social media can be a tool that helps reduce the prevalence and maintenance of gambling disorders. Our study has not unearthed such a discovery as it shows a significant positive relationship between social media usage and gambling problems among university students in Northern Cyprus. This study did not conclusively measure or study the interactions of university students in Northern Cyprus on social media and therefore cannot conclusively state why it appears that social media in fact has a negative impact on gambling addiction among the study population. However, based on the findings on the relationship between the frequency of use of social media and gambling behavior, the study shows that the more time spent on social media, the higher the chances that a user will engage in gambling.

The findings of the fourth hypothesis support those by Parke et al. (2013), King et al. (2014), Kim et al. (2015), and Gainsbury et al. (2015) who stated that social media and online gambling games are training grounds for budding gamblers

and lead to an increase in gambling problems. What their findings suggest is that people with the tendency to gamble based on their personality traits are pushed or encouraged by social media and online gambling games. The more time university students spend on social media platforms, the higher their chances of being exposed to online gaming and gambling platforms, which in turn will invariably increase their chances of engaging in gambling behavior. Also, the findings of this study partially support those by Wehrli (2008) who found out that there is no relationship between agreeableness and social media usage. So, it is therefore not beyond the scope of reason to assume that if agreeableness is not related to social media usage, then social media usage cannot mediate the relationship between agreeableness and gambling.

Furthermore, a more pertinent question that needs to be answered is if 'addiction to or use of social media falls under the Five-Factor Model (FFM). It should be noted that the FFM was developed at the infancy of the internet, and social media networking sites as we know them today, did not exist at the time. So, while it might be possible to fit social media usage into one of the Five dimensions in the FFM, it would truly futile because social media users of today cannot be said to fit perfectly into any of the identified dimensions as proposed by Costa and McCrae (1992). Wehrli (2008) in an attempt to address this phenomenon, found out that individuals with the extraversion personality trait are more likely to join and actively participate in the social media environment. However, his findings did not conclusively explain whether perhaps a new personality trait might emerge which fully explains online users' behavior. Further studies can seek to identify the personality trait that best describes the ardent social media user of today.

The findings showing social media as a mediating variable in the relationship between gambling and social media usage are interesting because studies have shown that a major motivation for social media usage is sensation-seeking. Sensation seeking in the sense that people make use of social media to escape their current realities and get lost in the tranquility and throwaway fun that social media can allow. This study found out that sensation seeking is positively related to gambling behavior hence supporting the Five-factor model and smith et al. (2007) study on the same subject.

The implication is that while it was traditionally true that personality traits are a predictor of gambling behavior, which numerous studies have proven, including the current study, current realities (characterized by social media usage) suggest that this relationship is moderately to highly moderated by social media usage. This suggests that social media is a major factor in determining our gambling habits, even more so than our personality traits.

This makes sense because even before the advent of social media, access to gambling institutions and establishments was a major factor in determining whether an individual takes up the habit or not. Which explains why people that live in countries with a lot of casinos and gambling establishments will be more likely to gamble irrespective of their personality traits. The same thing applies to social media, social media is plagued with numerous and often enticing gambling platforms and the more one uses social media, the higher the likelihood of trying out the habit.

Conclusion and Recommendations

This study has to a large extent charted a new course in the study of the relationship between personality traits and gambling behavior by also looking at the mediating role of social media. The findings of this study clearly show a significant relationship between personality traits and gambling behavior among university students in Northern Cyprus.

This study also considered the difference in gambling behavior between male and female students. The assumption was that gender will play a role in developing and maintaining gambling behavior. The findings showed that males were significantly more likely to gamble than females. Based on these findings, it is therefore recommended that further studies should look into the behavioral patterns of males VS females or the lived experiences of both genders that make them react differently to gambling incentives and the availability of gambling opportunities around them. The researchers surmise that being male or female might not be a determining factor in behavioral outcomes, but rather, gender roles and societal expectations might play a more important role in determining gambling behavior, it is, therefore, the recommendations that future studies examine this phenomenon.

The study also found out that the frequency and use of social media are significantly associated with gambling behavior among university students. The findings suggest that the more university students are exposed to online gaming on social

media-connected platforms, the more likely they are to eventually and habitually engage in gambling behavior. The study also examined the mediating role of social media on the relationship between personality traits and gambling behavior. The findings showed that social media usage is a mediating factor in the relationship between personality traits and gambling behavior. Further studies can seek to find out what it is about social media that encourages this behavior, and what combination of factors (such as type of game, cost of the game, the cost to play, difficulty level, access to friends' performance, etc.) is most likely to force social media users to part with money to play or gamble. Moreover, different motivations for social media use can be tested as moderators in the relationship between personality traits and gambling behavior.

It should also be noted that there is a serious dearth of literature on the mediating role of social media on the relationship between personality traits and gambling behavior. Therefore, this study is one of the first studies to measure this phenomenon and as such it is academically expedient that future studies further investigate this phenomenon so a consensus on the role of social media in gambling behavior can be solidified. Moreover, longitudinal studies that cover different age ranges can offer more information on how social media mediates the relationship between personality traits and gambling behavior among young adults at different developmental stages which may enrich age-comparative studies in this context.

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