The Relation of Motivation Factors for Online Games With Personality Disorders, Addiction, Shyness, and Loneliness in Kuwait

Hasan Abbas, College of Business Administration, Kuwait*

ABSTRACT

Drawing on the self-development theory (SDT), this study examines the relation between the factors that motivate online gaming and the effects of addiction, shyness, and loneliness. The authors have modified the SDT theory by adding intrinsic and extrinsic factors to measure the degree of its effect on addiction in online gaming settings. Next, they develop a special instrument to measure gamers' experience and their level of addiction. The sample is 671 online gamers who participated in an online survey. A confirmatory factor analysis and structured equation modeling tests are conducted to identify reliable factors and the goodness of fit of the research model. The findings show that the effect of addiction on shyness and loneliness is minor. Furthermore, loneliness is affected mostly by anxiety of others. In addition, the challenge of meeting the goals of gaming has the greatest effect on addiction. The study offers important implications for decision makers among family members such as parents and among society in general such as policy makers to avoid the side effects of online gaming.

KEYWORDS

Addiction, Belonging, Challenge, Kuwait, Loneliness, Self-Determination Theory (SDT), Shyness

INTRODUCTION

Hofstede (2014) identifies Kuwait as a collectivist society. This type means the Kuwaiti population leans more towards being socially driven than individually driven. Also, he considers Kuwait to have a masculine dimension based on his research. However, after the diffusion in Kuwait, many cultural values have changed. For example, Wheeler, (2001) concludes that the wide spread of the internet in Kuwait during the 1990s has made people cross gender boundaries "and to protest the state's new gender law."

Since the massive inflation of online gaming usage around the globe, professionals and researchers have shown an exceptional interest in understanding the effects of this overuse and its psychological underpinnings (Kuss et al., 2012). Players of online games have different motivations to engage in playing and are faced with different side effects if playing reaches an exaggerated limit. Players aim

is to satisfy unmet needs such as interpersonal connections (Billieux et al., 2013) and other reasons (Lemercier et al., 2021).

Although studying the motivation behind online gaming is an important topic, there are few formal theories on motivation in the literature on online gaming (Demetrovics et al., 2011; Z. Hussain et al., 2015; King & Delfabbro, 2014). The Self-Determination Theory (SDT) "is a broad framework for understanding factors that facilitate or undermine intrinsic motivation, autonomous extrinsic motivation, and psychological wellness" (Richard M. Ryan & Deci, 2020). Accordingly, the SDT is an important theory that studies intrinsic and extrinsic motivations related to the research on gaming. This theory offers multidimensional conceptualizations that describe the motivations behind gaming to assess level and type of motivation (Lafrenière et al., 2012, p. 827). Since its introduction, this theory has attracted a wide range of scholars who have applied it to many domains such as health care (Ntoumanis et al., 2021), leadership (Kanat et al., 2020), exercising (Kanat et al., 2020), and academia (Kaur & Noman, 2020). However, it has not been applied to measure the negative effects of motivational factors on personality disorders, such as addiction, loneliness, and shyness.

Addiction is an excessive use of something and the inability to stop that use. According to Goodman (1990), it is characterized by powerlessness and unmanageability. The overuse of online gaming makes the gamer feel the need to be alone more and more, not to be disturbed while enjoying playing, and to not be concerned about the negative consequences. This overuse should have a negative effect and push the gamer to avoid offline social meetings that leads to the development of a sense of shyness that leads to a greater feeling of loneliness. Loneliness is a crucial area of research, especially recently due to the intensive use of information and communication technologies (ICT) and the massive exploration of online games. Most definitions follow that of Peplau & Perlman (1982); they say that loneliness is "a subjective unpleasant or even uncomfortable state as a result of the contradiction between one's social expectation and her/his actual social network". Shyness is another crucial individual trait that the research has focused on recently. Loneliness and shyness both are responsible for negative emotions and an undesirable degree of satisfaction with life (Jones et al., 1990). The combination of these negative personality traits with factors that motivate gaming is scarce in the literature because formal theories of motivation are rarely applied to video games (Beard & Wickham, 2016; Demetrovics et al., 2011). In general, a disorder resulting from new technologies such as social media and online gaming can negatively affect human's life (Kuss et al., 2012; Marttila et al., 2021).

In the Arab region, there is a noticeable lack of profound studies that focus on the relationship between gaming as a whole along with the relationship's effects on personality and behavioral attitude (Abbas, 2020; Saquib et al., 2017). Although more work is required, there are a few research studies in the field of technological adoption that are relevant to this topic. For example, Rouibah & Hamdy, (2009) investigate factors that have an effect on user satisfaction with instant messaging (IM) in Kuwait. Abbas (2014b) adopts the Theory of Reasoned Action (TRA) to study the association between Kuwaiti users and their behavioral intention to use such technological gadgets. (Abbas, 2015; Abbas & Hamdy, 2015) examine the factors that affect the adoption of smartphones in Kuwait. Moreover, (Rouibah et al., 2011) study the effects of mobile phone cameras on actual usage in Kuwait.

It is important to highlight at this point that our study focuses on Kuwait due to noticeable cultural differences between the Arabian Gulf societies (Qatar, Kuwait, Saudi Arabia, Bahrain, United Arab Emirates, and Oman) versus Western or Far Eastern societies. This is well-known and well established in scientific studies. For example, Korpershoek et al., (2021) study gender and cultural differences in school motivation. They found Qatary students are "strongly deviated from the other samples" compared to eight culturally diversed groups from Hong Kong, Philippines, Singapore, Australia, and Netherlands (Korpershoek et al., 2021, p. 27). Other studies show such differences as well. One example late study of El Haddad (2021) where findings show that administrative decisions differences between Oman versus Lebanon corporate leaders. Although they are both an Arab countries, the differences between them are obvious.

Compared to studies published by Western and Asian scholars, Arab scientific communities have not published enough studies that associate online gaming with the social and psychological effects on society and individuals. Therefore, the aim of our study is twofold: First, the study will focus on exploring this relationship further by examining such associations between online gaming and the impact on Middle Eastern societies (Abbas, 2020; Saquib et al., 2017). Second, the association between addiction and shyness and loneliness is still unclear in the literature. While many scholars explore the effect of depression and loneliness on internet addiction (Bozoglan et al., 2013; Meena et al., 2021), other studies show the opposite is also true (Błachnio et al., 2016). Therefore, this study is of great importance since intensive research studies should be identifying the degree of the effect of the type of use on the negative output of such usage to reach a more standard point of view towards such associations.

In next section I present theoretical background. After that in section three I present the research design, method, and statistical analysis. In section four discussions and implications of the study. Lastly, conclusion is in section five.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The research has developed many theories on the adoption of information technology such as the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Innovation Diffusion Theory (IDT) (Rogers, 1983), Technology Acceptance Model (TAM), and its related modifications and extensions (Davis, 1989; Rouibah & Abbas, 2010; Venkatesh & Davis, 2000; Venkatesh et al., 2003). However, there is still no well-established theory for online gaming and its negative effects on behavior and attitudes. In this study, I apply the SDT framework (Ryan & Deci, 2020) to identify the factors that motivate online gaming. Furthermore, I am interested in measuring the effect of the pathological use of online gaming on an individual's behavior in Middle Eastern country, namely the State of Kuwait.

Further, the literature lacks studies that investigate the link between the use of online gaming and negative psychological symptoms such as shyness, loneliness, and addiction. I have reviewed the last five years of publications in the Arab world and have found research studies focused on shyness and loneliness. However, these studies are not precisely related to the link between usage and psychological disorders. For example, (Stanger et al., 2017) investigate how regional cultural factors shape online engagement. The authors adopt Hofstede's cultural dimensions to evaluate religious and cultural factors that are associated with social media engagement in Saudi Arabia. (AlGhamdi, 2018) studies the effect of the social network Instagram in teaching English to Saudi high school students. (Alyedreessy et al., 2017) examines the effect of social media on Saudi females' imaginary audiences and self-esteem. Hossain et al., (2018) investigate the sharing of political content on an online social media platform and discuss how dangerous it is to do so in Saudi Arabia. Studies have also examined other behavioral problems in the Arab region. For example, Yousef et al., (2014), in their study of the UAE, find that the hours spent online are significantly correlated with childhood behavioral problems. These limited studies are evidence of the lack of research projects in this field.

Self-Determination Theory and Motivation Factors for Online Games

Although exploring the motivations behind online gaming is an important issue, few formal theories have been applied to this field (Beard & Wickham, 2016; Demetrovics et al., 2011; King & Delfabbro, 2014; Lafrenière et al., 2012; Ntoumanis et al., 2021). SDT (Ryan & Deci, 2020) presents a multidimensional motivation for online gaming. The SDT theorizes that the motivation falls under two broad types: intrinsic and extrinsic. Intrinsic motivation is the intention to play (perform) for the activity itself and nothing beyond this goal. Thus, when players enjoy the game and find it thrilling, he or she is doing so for the sake of intrinsic enjoyment and nothing beyond the activity itself. By contrast, when players engage in the game to some end and not for the activity's own sake, like gaining money or points or avoiding the annoyance of friends for example, in this case the player is
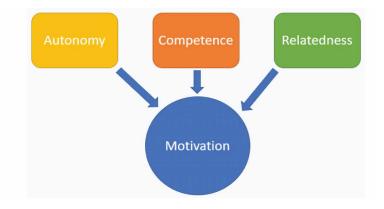
extrinsically motivated to do so. After this theory, plenty of research studies were published and in several domains of field study.

Based upon the SDT, people normally have three psychological needs (autonomy, competence, and relatedness) for well-being and psychological progress. First, autonomy refers to voluntary and self-decision actions. It is "activities that are imposed, controlling, or in conflict with one's true self are detrimental to autonomy needs. Competence refers to feeling effective, capable, and optimally challenged... Finally, relatedness refers to having a sense of belongingness and meaningful connection to others" (Uysal & Yildirim, 2016, p. 129). Figure 1 shows the three factors that compose the SDT. These three factors combined give individuals the motivation to perform. However, most research studies focus on the motivational effects of the three psychological factors.

The sense of belonging is relatedness in the SDT concept. Based on this, belonging is a socially driven factor that encourages people who live in a collectivist society (such as Kuwait) to participate more in groupware settings. Some scholars find that users of World of Warcraft who played in a community spent more time playing than individuals who did not belong to any specific community. The reason behind this behavior is justified by (Seay et al., 2004) who think social communities place social pressure on their community members in order to make them play more and more and for longer periods of time. In addition, the systematic literature review performed by (Liu et al., 2020) covers 24 papers on online gaming and user behavior in video game live streaming. The review finds only one study that highlights the importance of the feeling of belonging as a factor that attracts gamers. In another systematic literature review in the field of social network sites (SNS) driven by (Seabrook et al., 2016a), the sense of belonging shows a negative relation with depression and loneliness and a positive association with life well-being. Although these studies discuss social and personality disorders, they do not relate belonging with addiction and the pathological use of IT.

The human motivation theory claims that the reason why people are motivated to carry on social interaction with others is that they are aiming to fulfil their desire for affiliation (McClelland, 1961). Thus, many studies in the literature support the assumption that the virtual community may lead internet addiction (Chebbi et al., 2020; Chi et al., 2020). This is why I think people with high degrees of belonging are more engaged in online gaming communities and aim to satisfy their cybersocial needs (Hsu et al., 2009). A study by (Gao et al., 2017) explores the association between a sense of belonging and addiction through the subcategorized factor of enjoyment. They hypothesize that the sense of belonging encourages and promotes the use of social media and the need to be in social circles. The more they think they need enjoyment, the more likely they will be affected by the pathological use of SNS. Accordingly, they find a strong association between belonging and addiction. Therefore, I also

Figure 1. SDT Framework

argue that such incremental dependency on online gaming to satisfy social and personal psychological needs through a sense of belonging develops an addiction disorder overtime as well.

Additionally, experts have proposed many factors to model user's experiences when involved in interacting with online gaming content. Malone & Lepper (1987) state that the challenge refers to achieving the goals of the game. Under the framework of the SDT, the challenge is related to the concept of competence. Since online gaming has many small goals and strategic goals, I argue that gamers are continuously attracted to achieving their gaming goals and, hence, are affected by an addiction disorder.

Few research studies explore the antecedents of online gaming. For example, Hsu et al., (2009) study the motivation for online game through ten factors, their results show that only five are significant (curiosity, role-playing, belonging, obligation, and reward). Additionally, (Lafrenière et al., 2012) identify six motivational factors for online gaming. However, and in accordance with previous studies, I apply the personal and social factors proposed by (Choi & Kim, 2004). Accordingly, and in line with the SDT, I think the intrinsic motivation and integrated regulations will have a positive association with addiction.

In general, the SDT is rarely applied to the field of online gaming according to Lafreniére et al., (2012) and other scholars. In order to improve the research model, this study extends the SDT framework with additional factors from the literature.

Addiction

Addiction is an excessive use of something and the inability to stop that use. In general, technology addiction refers to a maladaptive and obsessive pattern of technology use that conflicts with one's normal functioning or other important activities (Chi et al., 2019; Sers et al., 2011).

Online gaming impose negative pressure on users that may induce what is scientifically known as game addiction (Gong et al., 2019). Studies show that excessive use of online gaming can cause less sleep with more disturbances (Khan et al., 2019), stress (Hawk et al., 2019), depression (Brunborg et al., 2019), academic failure (Alnjadat et al., 2019), and other mental and social problems.

Some argue that the "true prevalence of video game addiction is still uncertain" (Hussain et al., 2015). However, a sector of studies show that there is a high probability that players may be affected by the problematic behavior of addiction (Bargeron & Hormes, 2017; Hsu et al., 2009). A respectable number of papers confirm this relation and its significant correlation with technology overuse and personality disorders such as addiction and anxiety (Bérail et al., 2019; Seki et al., 2019), stress (You et al., 2019), and academic achievement (Zhang et al., 2018).

Another important negative effect of addiction is shyness. For example, (Han et al., 2017) indicate through a correlation analysis that shyness and addiction have a positive correlation with each other, similar to other studies (Blackwell et al., 2017; Zhang et al., 2019). Additionally, very few studies expose the relation between the two personality traits in the field of online gaming and whether there is an effect of online gaming addiction on shyness. Even more rare are studies that discuss the issue in an Arab region.

As I stated previously, in-depth discussions and research on the association between belonging and addiction in the literature in general are rare, specifically among Arab scholars. The case becomes even worse when it comes to online gaming. I cannot find many studies that talk about online gaming addiction in Arabian Gulf region. For example, Bener & Bhugra, 2013; Khan & Hammami, (2018) study problematic internet use in the Arabian Gulf region. They examine their research in Saudi Arabia and find that the educational level is the most influential factor in internet addiction. The findings of Alkhawaja & Alshabibi, (2020) also come to a similar conclusion. Hussain et al., (2020) do an exploratory study that uses Dubai school children aged 13-15 and find that children who excessively use online games face social, emotional, and behavioral problems as well as physiological pressures (e.g., stress, dehydration, and eye fatigue). Similarly, Rajab et al., (2020) explore gaming addiction in Saudi school students. They find that 5% of gamers are addicted and 11.4% have a high level of

stress that leads them to conclude that gaming is strongly associated with stress. To measure the effect of psychopathological variables and psychological variables, (Vally et al., 2020) find that a total of 67.3% of their sample population has PIU. (Almourad et al., 2020) follow a different approach by searching for better conceptualizations of PIU or addictive behaviors. In general, most research centers and Arab scholars focus on school students and neglect other sectors of society. Zhan & Chan, (2012) examine the regulations imposed by 20 different governments in the GCC region to reduce negative effects of online game addiction. Furthermore, their focus is mainly concentrated on addiction and other personality disorders or symptoms such as anxiety and stress but neglect the human side in general such as well-being, happiness, and life satisfaction, which is my concern in this study. In conclusion, after reviewing the systematic literature reviews such as the one done by Y. Liu et al., (2020) on online gaming and user behavior in video game live streaming and Seabrook et al., (2016b) on the SNS platform, I conclude that in-depth research in the Arab world that target this issue precisely is sparse.

There is some confusion in the research because it finds a reciprocal effect between addiction and shyness and loneliness. There is a school of thought that sees addiction as affecting loneliness and shyness (Bozoglan et al., 2013). Yet, another group of studies show the association between intensive use of social media and online gaming and negative behavioral and social output as being insignificant (Ferguson, 2017). For example, Ferguson (2017) does not find any correlation between children playing computer games and having aggressive or violent behavior. Similarly, Chae, (2018) finds no significant association between social media platforms and life satisfaction. Due to the lack of agreement on how the association between the pathological use of online gaming and its negative psychological effects works in the Arab region, my study fills this gap.

Loneliness Definition and Effects

According to Teppers et al., (2014) and several personality theories (McCrae & Costa, 1987), individual differences in behavioral consistency fall into two groups: dispositional characteristics and characteristic adaptations. The first category comprises people who have long-term stable feelings, thoughts, and behaviors while the second group comprises people who are less stable and have more situation-specific thoughts, feelings, and behaviors. The Big Five (Neuroticism, Extraversion, Openness, Conscientiousness, and Agreeableness) (McCrae & Costa, 1987) is an example of the first, and loneliness is an example of the second group (Asendorpf & Aken, 2003).

Loneliness is a universal human emotion that appears to affect everyone. However, the importance of loneliness as a personality trait comes from its acuteness. There is no one cause that is responsible for loneliness and a variety of treatments may be required to cure the condition (Cherry, 2018). Group of scholars describe loneliness as the discrepancy between the desired and acquired degrees of social relationships (Jin, 2013; Peplau & Perlman, 1982; Teppers et al., 2014). Yet another group refers to the negative effects of emotional and social isolation (Weiss, 1973).

The effects of acute degree of loneliness can be disastrous. Wootton et al., (2021) and Cherry, (2018) and others, find a group of health problems that are related to loneliness (depression, suicide, cardiovascular diseases, increased stress levels, and many more) (Haslam et al., 2018; Wilson et al., 2007).

Many articles are written about loneliness regarding Arabs (Jaradat et al., 2020; Gazo et al., 2020; Vally & El-Hichami, 2019; Heiman & Olenik, 2016). For example, Jaradat et al., (2020) investigate the relationship between using the internet and social media and ambition, unemployment, loneliness, and insomnia. Their findings show a strong correlation with all four dimensions. Gazo et al., (2020), find similar results in which a positive correlation exists between loneliness and internet addiction.

However, still more research is needed to discover the associations between advanced technologies and online gaming and its effect on Arabs. According to Jaradat et al., (2020), "a great deal must be done to achieve a deep understanding of the benefits and risks of technology". This is too obvious after reviewing all the research studies about loneliness. Most of these studies do not relate to technologies.

Therefore, I argue that more research is needed to explore and highlight the type of association between loneliness and advanced technologies such as social media applications and online gaming.

Shyness Definition and Effects

Although the term shyness is used widely among people's daily expressions, the term is difficult to define. Crozier, (2000) describes shyness as facets that characterize a person's internal feelings towards social interactions. Saunders & Chester, (2008), state: "Although shyness is a term commonly used to interpret behavior, its widespread use means that precise meaning is often lacking; shyness is a label that is often applied but not so clearly understood. Indeed, some psychologists are not even convinced that shyness is anything more than a common language label used to define an aspect of personality."

In one dimension, shyness is considered an extreme concern about oneself. Even though a shy person shows the motivation to create a positive interaction with others, he or she lacks the ability to do so because of a lack of self-confidence. Based on the self-presentation theory, Stritzke et al., (2004) describe shyness as individuals in social situations who attempt to control images of identity-relevant information to an acute degree to find themselves stuck and unable to move forward socially. This immobilization results in taking many precautions to avoid any mistakes or being negatively evaluated in social contexts (Zimbardo, 1977). The feelings of awkwardness and tension arise in social gatherings and with normal acquaintances (Jonathan et al., 1981). The discomfort that accompanies some people as a result of shyness ranges from mild to dramatic degrees of anxiety that reach disastrous levels that can disrupt their entire life (Zimbardo, 1977). Leary, (1995) was able to create a mathematical formula to reflect the fact that shyness is a function of the degree of an individual's motivation in building a positive evaluation in others. Some researchers state that the level of shyness can escalate and be noticeable in five situations: important authority figures, interactions with the opposite sex, opening dialogue with strangers, being under focus in small groups, and evaluative situations such as formal interviews or being on TV shows (Jonathan et al., 1986; L. Henderson & Zimbardo, 1998).

Crozier, (2000) states that shy people tend to be rather quiet and remain silent in social situations to avoid being evaluated negatively. Although shyness can be at acceptable levels where an individual can live his or her life normally, there are circumstances where results can be devastating. Zimbardo, (1977) claims that in some cases the levels of social interactions decrease to where it makes a person unable to make new friendships, meet new people, and enjoy positive life experiences.

Shy people have negative ideas about themselves as well as others. They normally interpret events according to their own pre-occupied beliefs. According to the literature, this is why a shyness disorder can develop into other psychological problems such as depression (Williams & Galliher, 2006; Bekhus et al., 2021). An important attribute of shy people is that they blame themselves more often and, accordingly, see themselves as less physically attractive (Henderson & Zimbardo, 1998). Furthermore, Federoff & Harvey, (1976) express shyness as a social failure phenomenon because this type of person cannot achieve his or her goals, and frequently justify his or her success as due to external factors and any failure to internal ones.

This personality trait restricts the individual's cognition (Moor et al., 2018; Zhao et al., 2018). Other studies show that shy people are at greater risk of other physiological as well as psychological problems compared to non-shy people (Coplan et al., 2018; Lahat et al., 2018; Liu et al., 2018). Because shy people fail to seek help from professionals, most of them develop further psychological, physical, and health problems (Peterson, 1988). According to Bell et al., (1993), shy people suffer more from health disorders and higher rates of hay fever, insomnia, and constipation than non-shy individuals.

The literature shows that shyness differs from culture to culture and from society to society. For example, Zimbardo, (1977) studies the historical differences between societies through shyness levels. Furthermore, Henderson & Zimbardo, (1998) show in a cross-cultural study that shyness is a universal challenge, and all societies suffer from this disorder to some degree. For example, Al-Saggaf & Begg, (2004) find Saudi females change and become less shy after the internet had penetrated their society during the 90s. However, in Kuwait, Al-Fadhli, (2009) investigates the importance of e-learning in

general and high education and finds that e-learning overcomes shyness among students, especially females. He concludes that shyness can still be found among youngsters who think electronic gadgets help them mitigate it and become more active in class discussions.

Shy people normally use other forms of social interaction, such as the internet and social technologies. Group of studies show the negative impact of shyness on social life of people with this negative facet. For example, Yang et al., (2021) exploit the negative impact of shyness on friendship. One study shows that shyness is positively associated with the tendency to become dependent on the internet (Chak & Leung, 2004). Another study shows shy people are involved more in online dating (Ward & Tracey, 2004). Finally, a group of studies shows that shy people tend to depend on the internet and other technologies to seek recreational activities (Peng & Liu, 2010; Scealy & Stevenson, 2002). Thus, I state the following hypotheses:

H1: The motivation factors for online gaming encourage players to overuse and become addicted to playing the games.
H2: Online game addiction is positively associated with shyness.
H3: Online game addiction is positively associated with loneliness.
H4: Arab game players who are shy feel a greater need to be alone because of the inadequacies in their social abilities.

METHODOLOGY

Population Sampling and Data

I designed a special instrument for this study. At the beginning the questionnaire was presented to two faculty members at the College of Business Administration to review for possible semantic or grammatical errors. Before the collection data stage, I initiated the process through a small sample to examine the validity of the study questionnaire. The pilot study composed of two cycles. The sample in the first cycle had a size of 27 that did not get an acceptable score in the Cronbach reliability test. The second cycle generated an acceptable and fit instrument. The new questionnaire was presented to the general public and asked them about their opinions regarding their attitudes on and experiences with online gaming. In order to conduct the distribution of the questionnaire, the researcher first presented the survey to students in my Introduction to Management Information Systems course. After that, I asked them to participate in distributing the instrument among their friends and relatives who are online gamers.

The questionnaire was divided into two sections. The first section collected the respondent's personal data. The second section was based on the research model and comprised four parts: motivational factors, addiction items, shyness items, and loneliness items. The questions on the
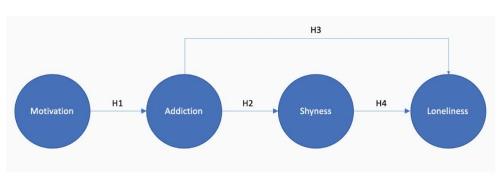
Figure 2. The initial research model for this study

research constructs were assessed using a five-point Likert scale (1=" Strongly disagree" to 5=" Strongly agree").

A random sample size of 671 online game players was collected that represented different groups and sectors. The gender distribution was 78.4% female (frequency=526) and 21.6% male. The social status in the sample was 28.3% married and 68.3% single. The academic background was 17.4% high school or less, 13.1% two years of college, B.S. degree 66.9%, and 2.5% were graduates (M.D. and Ph.D.). Table 1 shows the demographics of the study sample.

Table 1. Demographics

Variable	Category	Frequency	%
Gender	Male	145	21.6%
	Female	526	78.4%
Social Status	Married	190	28.3%
	Single	458	68.3%
	Separate	19	2.8%
	Widow	2	.3%
Academic Background	High school or less	117	17.4%
	Two years college	88	13.1%
	B.S.	449	66.9%
	M.S./PhD.	17	2.5%
Father Academic Background	High school or less	233	34.7%
	Two years college	138	20.6%
	B.S.	232	34.6%
	M.S./PhD.	65	9.7%
Mother Academic Background	High school or less	215	32%
	Two years college	154	23%
	B.S.	271	40.4%
	M.S./PhD.	27	4%
Age	Less than 14	8	1.2%
	14-18	45	6.7%
	18-22	285	42.5%
	22-26	106	15.8%
	26-30	73	10.9%
	30-40	86	12.8%
	40-50	52	7.7%
	50+	14	2.1%
Family monthly income	500 or less	48	7.2%
	500-1000	125	18.6%
	1000-1500	137	20.4%
	1500-2000	130	19.4%
	2000-3000	114	17%
	3000+	113	16.8%

Statistical Analysis

In order to examine the validity and dependency of the instrument and data collection procedure, I used many statistical tools. First, data reduction was tested through a factor analysis because of its validity in removing "redundancy that might exist between questions" (Aladwani, 2012).

I used the 21-item game addiction scale (Hussain et al., 2015), 20-item UCLA loneliness scale (Russell et al., 1978), 20-item shyness and sociability scale (Cheek & Melchior, 1985), challenge and belonging (Hsu et al., 2009), and intrinsic motivation and integrated regulation (Lafrenière et al., 2012). Table 2 shows the significant items loaded on their factors and all cross-loaded items were removed. It shows only four items (intrinsic motivation, integrated regulation, challenge, and belonging) were identified as having a significant explained variance and an acceptable reliability threshold. Additionally, the factorial validity test resulted in two different types of shyness (I named shyness 1 as "anxiety of others", and shyness 2 becomes "self-trust"). Figure 3 shows the improved research model and study hypotheses.

Table 3 shows the explained variance and the reliability of the measurement items. It shows that all of the reliabilities are above 70% and all of the variances are above 60% (see for further details Hair, et al., 2010).

Fitness of Conceptual Model and Latent Constructs Validation

I used the Lisrel 8.54 software to test the fitness of the conceptual model. Table 4 shows the goodness of fit, and it clearly supports the claim that my research model is statistically satisfied and verified. Precisely, the RMR = 0.06, GFI = 0.91, and AGFI = 0.89 (Hair et al., 2010).

For more verification, further statistical testing is needed. After verifying the conceptual model through the goodness of fit, the research needed two more tests for the validation and reliability of the latent constructs. "According to Hair et al. (2010), the Cronbach's reliability test presumes the unidimensionality of the constructs that is not always true" (Abbas & Hamdy, 2015). This is why the use of composite reliability is important to ensure the existence of the internal consistency in measurements per each construct. The composite reliability is calculated as follows:
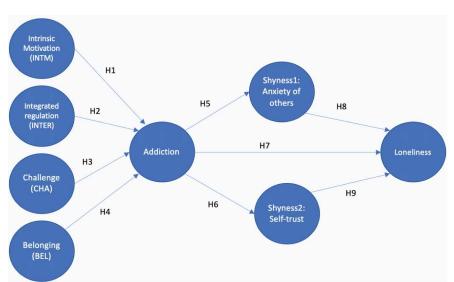
Figure 3. Research model

Table 2. Factor analysis

	1	2	3	4	5	6	7	8
INTM1			.816					
INTM2			.846					
INTM3			.804					
INTER2							.800	
INTER3							.816	
IDER3							.782	
RAND5				.754				
RAND6				.854				
RAND7				.848				
GADD2						.812		
GADD3						.798		
GADD4						.824		
SHY6					.822			
SHY8					.853			
SHY9					.794			
SHY10								.836
SHY14								.800
SHY17								.816
LON11	.835							
LON12	.851							
LON14	.830							
CHA1		.847						
CHA2		.838						
CHA3		.738						

$$\text{Composite Reliability} = \frac{\left(\sum Standardized\ loadings\right)^2}{\left(\sum Standardized\ loadings\right)^2 + \sum|error|}$$

The second test for measuring the reliability is the amount of variance extracted. According to (Al-Dosiry et al., 2012), "the variance extracted is used to evaluate the overall amount of explained variations accounted for by the construct". It is computed as follows:

$$\text{Variance extracted} = \frac{\sum\left(Standardized\ loadings\right)^2}{\sum\left(Standardized\ loadings\right)^2 + \sum|error|}$$

Table 3. Variance explained and reliability coefficient

Factor	Items	Variance Explained	Reliability Coefficient
Intrinsic Motivation (INTM)	INTM1, INTM2, INTM3	74%	82%
Integrated and Identified Regulation (INTER)	INTER2, INTER3, IDER3	72%	80.5%
Challenge (CHA)	CHA1, CHA2, CHA3	80.01%	87.4%
Belonging (BEL)	RAND5, RAND6, RAND7	75.6%	83.8%
Anxiety of others (Shyness_1)	SHY6, SHY8, SHY9	75.8%	84%
Self-trust (Shyness_2)	SY10, SHY14, SHY17	69.5%	78.1%
Loneliness	LON11, LON12, LON14	77.8%	85.8%
Addiction (ADD)	GADD2, GADD3, GADD4	76%	84%
General Conceptual Model	All items	76.77%	87%

Table 4. Goodness of fit statistics

Goodness of fit test	Indicator
Chi-Square for Independence Model with 276 Degrees of Freedom	17336.63
Independence AIC	17384.63
Model AIC	924.09
Saturated AIC	600.00
Independence CAIC	17516.84
Model CAIC	1271.15
Saturated CAIC	2252.63
Normed Fit Index (NFI)	0.96
Non-Normed Fit Index (NNFI)	0.96
Parsimony Normed Fit Index (PNFI)	0.82
Comparative Fit Index (CFI)	0.97
Incremental Fit Index (IFI)	0.97
Relative Fit Index (RFI)	0.95
Critical N (CN)	252.33
Root Mean Square Residual (RMR)	0.06
Standardized RMR	0.06
Goodness of Fit Index (GFI)	0.91
Adjusted Goodness of Fit Index (AGFI)	0.89
Parsimony Goodness of Fit Index (PGFI)	0.72

Table 5. Construct composite reliability and Average variance extracted and the coefficient of the determination R^2

	Construct Composite Reliability	AVE	R^2
	(>50%)	(>70%)	
INTM	0.855	0.7	---
INTER	0.814	0.6	---
CHA	0.900	0.8	---
BEL	0.855	0.7	---
AoO	0.874	0.7	0.14
ST	0.811	0.6	0.10
LON	0.888	0.7	0.36
ADD	0.870	0.7	0.35

One more test to validate the importance of the research model is discriminant validity (DV). DV ensures there is no overlapping among the study measurements. If DV <= 0.85, it is acceptable and, hence, the measurements lack any overlap. Table 6 shows the results for DV of the study measurements.

Path Analysis and Verification of Proposed Research Model

After different statistical tests and verifying the research model through goodness of fit, there is a need to test the path significance between the constructs. Table 7 shows the results. All research model hypotheses are significant and only one hypothesis (H9) is not significant.

DISCUSSION AND IMPLICATIONS

My research is based on the Self-Determination Theory (SDT) where the motivations behind playing are social and personal. For identifying these factors, I adopt those developed by other scholars (Hsu et al., 2009; Lafrenière et al., 2012). I identify four significant factors that press players to play that lead to addiction to online games. The most influential effect on addiction is the motivation factor of challenge ($\alpha=0.34$). The total effect of the conceptual model shows that this factor explained (R2) 35% of the addiction. Furthermore, the overall conceptual model explains 36% of the loneliness, most of which is the effect of shyness.
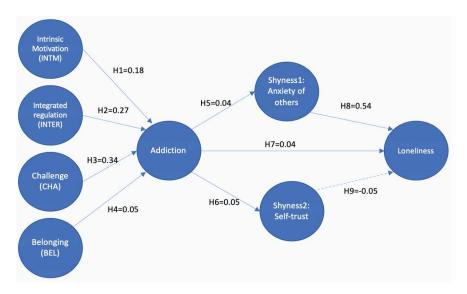
Table 6. Discriminant validity test

	INTM	INTER	CHA	BEL	AoO	ST	LON	ADD
INTM	1							
INTER	0.34764	1						
CHA	0.59276	0.5491	1					
BEL	0.38598	0.6234	0.627	1				
AoO	0.17355	0.2016	0.214	0.139	1			
ST	0.15609	0.1723	0.187	0.12	0.1306	1		
LON	0.16064	0.1764	0.19	0.126	0.6583	0.059	1	
ADD	0.47526	0.5346	0.599	0.371	0.4242	0.369	0.375	1

Table 7. Path coefficients

	t_{value}	p_{value}	Path Coeff.	Standard Error	Hypotheses	Significance
INTM->ADD	11.6268	0.0000000	0.18	0.05	H1	Sig
INTER->ADD	13.0335	0.0000000	0.27	0.05	H2	Sig
CHA->ADD	16.1657	0.0000000	0.34	0.05	H3	Sig
BEL->ADD	8.7362	0.0000000	0.05	0.05	H4	Sig
ADD->AoO	10.3011	0.0000000	0.37	0.04	H5	Sig
ADD->ST	8.4336	0.0000000	0.31	0.05	H6	Sig
ADD->LON	9.0420	0.0000000	0.15	0.04	H7	Sig
AoO-LON	18.4157	0.0000000	0.54	0.04	H8	Sig
ST-LON	1.2949	0.0979057	-0.05	0.04	H9	Not Sig

Figure 4. Research model with path coefficients

As discussed before, shyness is the fear and discomfort in the presence of others. Mainly, shy people fear being evaluated by others because of the reluctance to make spontaneous utterances, to make opinions, and to make any responses that leads to the limited likelihood of further interaction. A majority of studies find a strong relation and effect between shyness and technology addiction. All of those studies verify the significance of shyness as a predictor of addiction (Hong et al., 2019; Zhang et al., 2019). However, these studies rarely examine the effect of addiction as a predictor of shyness. My study confirms this result and finds there is a significant relation between addiction and shyness and loneliness, although the effect is not very strong ($\alpha=0.04$). This means that addiction has limited effects on shyness and loneliness that is similar to other studies in other parts of the world and precisely findings of Ferguson (2017), Chae, (2018) and many others. In other terms, cultural differences does not play a role in this regard.

Another important issue is that shyness has two forms. Most studies in the literature talk about one while my results show two distinct types of shyness. However, only the anxiety of others is influential and most of its effect is on loneliness (α=0.54).

This study has different implications. The first implication for school administrations, parents, and academic authorities should be very aware of the negative effects of online gaming addiction. It may lead students and youngsters to develop bad habits and avoid being socially active and become shier and prefer to being alone than being with others. This study empirically proves that addiction can cause shyness and loneliness even in minor degrees. Therefore, the administrators in a student's life should take responsibility and control online gaming.

The second implication is that teachers and parents should encourage their students and children to engage in a more social life, instead of leaving them with their online gaming. Stable relationships with friends, family members, and school colleagues help youngsters to build healthy personalities and to be more satisfied socially and mentally.

Another implication is that researchers should be aware of the negative effects of motivational factors in some fields. Although the SDT is applied mostly to positive settings, I found in this research that motivational factors in online gaming are responsible for the negative effects such as addiction.

CONCUSION AND LIMITATIONS

The aim of this study is to examine the negative effects of online gaming on Arab society by using Kuwait as a case study. I adopted the Self-Determined Theory (SDT) to examine the association between factors that pressure individuals to be engaged in online gaming, and the negative results from pathological play that leads to more shyness and loneliness. My findings show that all hypotheses are significant. The most powerful effect on loneliness comes from anxiety of others (α = 0.54). Challenge to meet gaming goals has the greatest effect on addiction (α =0.34).

I have showed through the literature that the associations between shyness and loneliness and addiction are reciprocal (Tian et al., 2021). Many studies show that the former affects addiction (Bozoglan et al., 2013; Foroughi et al., 2019; Longstreet & Gonzalez, 2018), and another group of studies show they have no effect on addiction (Błachnio et al., 2016; Shahnaz & Karim, 2014). My findings show that although addiction has a significant association with shyness and loneliness, their effect is almost insignificant, which supports the opposite claim (Buyukbayraktar, 2020).

My study finds a group of factors that encourage players to become addicted to online games that are similar to the findings of (Liu & Chang, 2016). However, there are many other factors that may play crucial roles in becoming addicted to online gaming. For example, online gaming plays only a small part in a Kuwaiti youngster's time. Kuwait has a high rate of technology penetration and most young people have more than one mobile phone and many social media accounts. Snapchat alone occupies 1.65 million active users in Kuwait (Social Media Insights, 2019). These programs and technologies occupy most of their time daily. Thus, more research should be conducted to examine the roles and effects of other types of media and technologies. Accordingly, my research sheds light on critical issues related to online gaming and intensive technology use and their effects on the psychological and social behaviors of people. The findings do not show an important association between addiction and shyness and loneliness; however, addiction has other negative outcomes such as bad health outcomes, bad eating habits, bad sleeping habits, bad family relationships, and degraded social interactions in general as well as a critical decrease in attendance at work or school (Kuss et al., 2012; Wang et al., 2021).

An important output of this research is that the challenge to meet the goals of gaming has the greatest effect on addiction. This finding as compared to belonging (socially driven factor) means Arab society does not experience a social atmosphere like in offline relationships. Challenge plays a significant role in pushing them to play and engage in the online gaming community instead of the feeling of belonging to the real community. Maybe this is true because most online players do not

know each other, and many are in neighboring areas or even thousands of miles away in the US and Europe, which reflects the minimal effect on their feelings and socially triggered emotions.

One limitation of this study is having participants self-evaluate themselves can be considered a limitation. Another limitation is that the sample is homogenous as the participants are all Kuwaiti. According to demographic data, Kuwaiti nationals constitute 30% of the total population, and 70% are other nationalities (Arabs and non-Arabs). My results may be more biased towards one side and not fully representative of the actual current population in Kuwait. The third limitation is that my study does not consider other important factors that influence addiction. In this regard, we propose different directions for future studies: first, to develop comparative studies against Eastern societies. Second, it is known negative impacts of addiction, in is interesting to research the relationship between online gaming addiction and divorce rates.

REFERENCES

Abbas, H. A. (2014). Subjective norm as antecedents of consumers' behavioral intentions to use smart phones in Arab world. *Vision 2020: Sustainable Growth, Economic Development, and Global Competitiveness - Proceedings of the 23rd International Business Information Management Association Conference, IBIMA 2014*, 1–20.

Abbas, H. A. (2014). Antecedents of Consumers ' Behavioral Intentions to Use Smart Phones in Arab World. *Proceedings of World Business and Social Science Research Conference,* 1–20. doi:10.5171/2016

Abbas, H. A. (2015). Psychological Constructs as Antecedents of Behavioral Intentions to Use Smart Phones in Arab World. *World Review of Business Research*, 5(1), 20–38.

Abbas, H. A. (2020). The Relation Between The Relation Between Depression And Addiction To Online Games In Kuwait. *Arab Journal of Administrative Sciences*, 27(1), 65. doi:10.34120/0430-027-001-005

Abbas, H. A., & Hamdy, H. I. (2015). Determinants of continuance intention factor in Kuwait communication market: Case study of Zain-Kuwait. *Computers in Human Behavior*, 49(1), 648–657. doi:10.1016/j.chb.2015.03.035

Ajrouch, K. J. (2008). Social Isolation and Loneliness Among Arab American Elders: Cultural, Social, and Personal Factors. *Research in Human Development*, 5(1), 44–59. doi:10.1080/15427600701853798

Al-Dosiry, K., Al-Ajmy, R., Madzikanda, D., & Hamdy, H. (2012). *Organization creativity evidence from banking sector.* Academic Press.

Al-Fadhli, S. (2009). Instructor perceptions of E-learning in an Arab country: Kuwait University as a case study. *E-learning*, 6(2), 221–229. doi:10.2304/elea.2009.6.2.221

Al Khatib, S. A. (2012). Exploring the relationship among loneliness, self-esteem, self-efficacy and gender in United Arab Emirates College Students. *Europe's Journal of Psychology*, 8(1), 159–181. doi:10.5964/ejop.v8i1.301

Al-Saggaf, Y., & Begg, M. M. (2004). Online communities versus offline communities in the Arab/Muslim world. *Journal of Information*, *Communication and Ethics in Society*, 2(1), 41–54. doi:10.1108/14779960480000242

Aladwani, A. M. (2012). An Exploratory Investigation of Kuwaitis' Views of E-Government Quality. *13th Global Information Technology Management Association World Conference*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2189829

AlGhamdi, M. A. (2018). Arabic Learners' Preferences for Instagram English Lessons. *English Language Teaching*, 11(8), 103. doi:10.5539/elt.v11n8p103

Alkhawaja, A., & Alshabibi, I. (2020). Internet Addiction & Loneliness Among tenth grades students in Al-Sharqiya North at Sultanate of Oman. *Arab Journal of Sciences & Research Publishing*, 36(4). Advance online publication. doi:10.26389/AJSRP.C290420

Almourad, M. B., Mcalaney, J., Skinner, T., Pleva, M., & Ali, R. (2020). Defining Digital Addiction. *Psihologija (Beograd)*, 1–17. http://www.doiserbia.nb.rs/img/doi/0048-5705/2020 OnLine-First/0048-57052000017A.pdf

Alnjadat, R., Hmaidi, M. M., Samha, T. E., Kilani, M. M., & Hasswan, A. M. (2019). Gender variations in social media usage and academic performance among the students of University of Sharjah. *Journal of Taibah University Medical Sciences*, 14(4), 390–394. doi:10.1016/j.jtumed.2019.05.002 PMID:31488973

Alyedreessy, L. M., Helsdingen, A. S., & Al-Sobaihi, B. (2017). Social Media, Social Inclusion and Women's Self-Esteem. In *Arab Women and the Media in Changing Landscapes*. Palgrave Macmillan. https://link.springer.com/chapter/10.1007/978-3-319-62794-6_7#citeas

Arnold, A. P., & Cheek, J. M. (1986). Shyness, self-preoccupation and the stroop color and world test. *Personality and Individual Differences*, 7(4), 571–573. doi:10.1016/0191-8869(86)90135-2

Asendorpf, J. B., & van Aken, M. A. G. (2003). Personality-relationship transaction in adolescence: Core versus surface personality characteristics. *Journal of Personality*, 71(4), 629–666. doi:10.1111/1467-6494.7104005 PMID:12901433

Bargeron, A. H., & Hormes, J. M. (2017). Psychosocial correlates of internet gaming disorder: Psychopathology, life satisfaction, and impulsivity. *Computers in Human Behavior*, *68*, 388–394. doi:10.1016/j.chb.2016.11.029

Beard, C. L., & Wickham, R. E. (2016). Gaming-contingent self-worth, gaming motivation, and Internet Gaming Disorder. *Computers in Human Behavior*, *61*, 507–515. doi:10.1016/j.chb.2016.03.046

Bekkhus, M., Baldwin, D., Coplan, R. J., von Soest, T., Skaret, S., Ulset, V., & Borge, A. I. (2021). Examining launch and snare effects in the longitudinal associations between shyness and socio-emotional difficulties in childhood. *Social Development*, sode.12528. doi:10.1111/sode.12528

Bell, I. R., Martino, G. M., Meredith, K. E., Schwartz, G. E., Siani, M. M., & Morrow, F. D. (1993). Vascular disease risk factors, urinary free cortisol, and health histories in older adults: Shyness and gender interactions. *Biological Psychology*, *35*(1), 37–49. doi:10.1016/0301-0511(93)90090-U PMID:8435451

Bener, A., & Bhugra, D. (2013). Lifestyle and depressive risk factors associated with problematic internet use in adolescents in an Arabian Gulf culture. *Journal of Addiction Medicine*, *7*(4), 236–242. doi:10.1097/ADM.0b013e3182926b1f PMID:23666321

Billieux, J., Van der Linden, M., Achab, S., Khazaal, Y., Paraskevopoulos, L., Zullino, D., & Thorens, G. (2013). Why do you play World of Warcraft? An in-depth exploration of self-reported motivations to play online and in-game behaviours in the virtual world of Azeroth. *Computers in Human Behavior*, *29*(1), 103–109. doi:10.1016/j.chb.2012.07.021

Błachnio, A., Przepiorka, A., Boruch, W., & Bałakier, E. (2016). Self-presentation styles, privacy, and loneliness as predictors of Facebook use in young people. *Personality and Individual Differences*, *94*, 26–31. doi:10.1016/j.paid.2015.12.051

Błachnio, A., Przepiorka, A., & Pantic, I. (2016). Association between Facebook addiction, self-esteem and life satisfaction: A cross-sectional study. *Computers in Human Behavior*, *55*, 701–705. doi:10.1016/j.chb.2015.10.026

Blackwell, D., Leaman, C., Tramposch, R., Osborne, C., & Liss, M. (2017). Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction. *Personality and Individual Differences*, *116*, 69–72. doi:10.1016/j.paid.2017.04.039

Bozoglan, B., Demirer, V., & Sahin, I. (2013). Loneliness, self-esteem, and life satisfaction as predictors of Internet addiction: A cross-sectional study among Turkish university students. *Scandinavian Journal of Psychology*, *54*(4), 313–319. doi:10.1111/sjop.12049 PMID:23577670

Brunborg, G. S., & Burdzovic Andreas, J. (2019). Increase in time spent on social media is associated with modest increase in depression, conduct problems, and episodic heavy drinking. *Journal of Adolescence*, *74*, 201–209. doi:10.1016/j.adolescence.2019.06.013 PMID:31254779

Buyukbayraktar, C. G. (2020). Predictive Relationships Between Social Anxiety, Internet Addiction and Alexithymia in Adolescents. *Journal of Education and Learning*, *9*(2), 222. doi:10.5539/jel.v9n2p222

Chae, J. (2018). Reexamining the relationship between social media and happiness: The effects of various social media platforms on reconceptualized happiness. *Telematics and Informatics*, *35*(6), 1656–1664. doi:10.1016/j.tele.2018.04.011

Chak, S. E., & Leung, L. (2004). Shyness and locus of control as predictors of Internet addiction and Internet use. *Cyberpsychology & Behavior*, *2*(7), 559–570. doi:10.1089/cpb.2004.7.559 PMID:15667051

Chebbi, P., Koong, K., & Liu, L. (2020). Some Observations on Internet Addiction Disorder Research. *Journal of Information Systems Education*, *11*(3–4), 97.

Cheek, J. M., & Melchior, L. A. (1985). Measuring the Three Components of Shyness. In M. H. Davis & S. L. Franzoi (Eds.), *Emotion, Personality, and Personal Well-Being II. Symposium conducted at the annual convention of the American Psychological Association, Los Angeles.* Academic Press.

Cheek, J. M., & Stahl, S. S. (1986). Shyness and verbal creativity. *Journal of Research in Personality*, *20*(1), 51–61. doi:10.1016/0092-6566(86)90108-X

Cheek, J. M., & Buss, A. H. (1981). Shyness and sociability. *Journal of Personality and Social Psychology, 41*(2), 330–339. http://psycnet.apa.org/doiLanding?doi=10.1037%2F0022-3514.41.2.330

Cherry, K. (2018). *What You Should Know About Loneliness: Causes and Health Consequences of Feeling Lonely*. Verywell Mind.

Chi, X., Hong, X., & Chen, X. (2020). Profiles and sociodemographic correlates of Internet addiction in early adolescents in southern China. *Addictive Behaviors, 106*(October), 106385. 10.1016/j.addbeh.2020.106385

Choi, D., & Kim, J. (2004). Why People Continue to Play Online Games: In Search of Online Contents. Academic Press.

Coplan, R. J., Ooi, L. L., Xiao, B., & Rose-Krasnor, L. (2018). Assessment and implications of social withdrawal in early childhood: A first look at social avoidance. *Social Development*, *27*(1), 125–139. doi:10.1111/sode.12258

Correa, T., Hinsley, A. W., & de Zúñiga, H. G. (2010). Who interacts on the Web?: The intersection of users' personality and social media use. *Computers in Human Behavior*, *26*(2), 247–253. doi:10.1016/j.chb.2009.09.003

Crozier, W. R. (2000). Shyness and social relationships: continuity and change. In *Shyness: Development, Consolidation and Change*. Taylor & Francis. https://www.taylorfrancis.com/books/e/9781134591824/chapters/10.4324%2F9780203183427-7

Da Zhan, J., & Chan, H. C. (2012). Government Regulation of Online Game Addiction. *Communications of the Association for Information Systems*, *30*. Advance online publication. doi:10.17705/1CAIS.03013

Dan, P. M., & Jennifer, L. P. (2006). New Big Five. *The American Psychologist*, *61*(3), 204–217. PMID:16594837

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

De Bérail, P., Guillon, M., & Bungener, C. (2019). The relations between YouTube addiction, social anxiety and parasocial relationships with YouTubers: A moderated-mediation model based on a cognitive-behavioral framework. *Computers in Human Behavior*, *99*, 190–204. Advance online publication. doi:10.1016/j.chb.2019.05.007

De Moor, E. L., Denollet, J., & Laceulle, O. M. (2018). Social inhibition, sense of belonging and vulnerability to internalizing problems. *Journal of Affective Disorders*, *225*(September), 207–213. doi:10.1016/j.jad.2017.08.034 PMID:28837955

Demetrovics, Z., Urbán, R., Nagygyörgy, K., Farkas, J., Zilahy, D., Mervó, B., Reindl, A., Ágoston, C., Kertész, A., & Harmath, E. (2011). Why do you play? The development of the motives for online gaming questionnaire (MOGQ). *Behavior Research Methods*, *43*(3), 814–825. doi:10.3758/s13428-011-0091-y PMID:21487899

Donnelly, E., & Kuss, D. J. (2017). Depression among Users of Social Networking Sites (SNSs): The Role of SNS Addiction and Increased Usage. *Journal of Addiction and Preventive Medicine*, *02*(01), 1–6. doi:10.19104/japm.2016.107

El Haddad, P., Bachkirov, A.A., & Grishina, O., (2021). Comparative CSR decision-making in the Middle East: an exploratory study. *International Journal of Islamic and Middle Eastern Finance and Management*.

Federoff, N. A., & Harvey, J. H. (1976). Focus of attention, self-esteem, and the attribution of causality. *Journal of Research in Personality*, *10*(3), 336–345. doi:10.1016/0092-6566(76)90023-4

Ferguson, C. J., & Colwell, J. (2017). Understanding Why Scholars Hold Different Views on the Influences of Video Games on Public Health. *Journal of Communication*, *67*(3), 305–327. doi:10.1111/jcom.12293

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Academic Press.

Foroughi, B., Iranmanesh, M., Nikbin, D., & Hyun, S. S. (2019). Are depression and social anxiety the missing link between Facebook addiction and life satisfaction? The interactive effect of needs and self-regulation. *Telematics and Informatics*, *43*(June), 101247. doi:10.1016/j.tele.2019.101247

Gao, W., Liu, Z., & Li, J. (2017). How does social presence influence SNS addiction? A belongingness theory perspective. *Computers in Human Behavior*, *77*, 347–355. Advance online publication. doi:10.1016/j.chb.2017.09.002

Gazo, A. M., Mahasneh, A. M., Abood, M. H., & Muhediat, F. A. (2020). Social self-efficacy and its relationship to loneliness and internet addiction among hashemite university students. *International Journal of Higher Education*, *9*(2), 144–155. doi:10.5430/ijhe.v9n2p144

Gong, X., Zhang, K. Z. K., Cheung, C. M. K., Chen, C., & Lee, M. K. O. (2019). Alone or together? Exploring the role of desire for online group gaming in players' social game addiction. *Information & Management*, *56*(6), 103139. doi:10.1016/j.im.2019.01.001

Goodman, A. (1990). Addiction: Definition and implications. *British Journal of Addiction*, *85*(11), 1403–1408. doi:10.1111/j.1360-0443.1990.tb01620.x PMID:2285834

Hair, J., Black, W., Babin, J., Anderson, R., & Tatham, R. (2010). *Multivariate data analysis* (7th ed., Vol. 1). Pearson. doi:10.1007/978-94-009-3789-5

Han, L., Geng, J., Jou, M., Gao, F., & Yang, H. (2017). Relationship between shyness and mobile phone addiction in Chinese young adults: Mediating roles of self-control and attachment anxiety. *Computers in Human Behavior*, *76*, 363–371. doi:10.1016/j.chb.2017.07.036

Haslam, S. A., McMahon, C., Cruwys, T., Haslam, C., Jetten, J., & Steffens, N. K. (2018). Social cure, what social cure? The propensity to underestimate the importance of social factors for health. *Social Science & Medicine*, *198*, 14–21. doi:10.1016/j.socscimed.2017.12.020 PMID:29274614

Hawk, S. T., van den Eijnden, R. J. J. M., van Lissa, C. J., & ter Bogt, T. F. M. (2019). Narcissistic adolescents' attention-seeking following social rejection: Links with social media disclosure, problematic social media use, and smartphone stress. *Computers in Human Behavior*, *92*, 65–75. doi:10.1016/j.chb.2018.10.032

Heiman, T., & Olenik-Shemesh, D. (2016). Computer-based communication and cyberbullying involvement in the sample of Arab teenagers. *Education and Information Technologies*, *21*(5), 1183–1196. doi:10.1007/s10639-015-9375-7

Henderson, L., & Zimbardo, P. (1998). *Encyclopedia of Mental Health*. Academic Press.

Hofstede, G. (2014). *The 6-D model of national culture*. Geert Hofstede.

Hong, W., Liu, R.-D., Oei, T.-P., Zhen, R., Jiang, S., & Sheng, X. (2019). The mediating and moderating roles of social anxiety and relatedness need satisfaction on the relationship between shyness and problematic mobile phone use among adolescents. *Computers in Human Behavior*, *93*, 301–308. doi:10.1016/j.chb.2018.12.020

Hossain, M. A., Dwivedi, Y. K., Chan, C., Standing, C., & Olanrewaju, A. S. (2018). Sharing Political Content in Online Social Media: A Planned and Unplanned Behaviour Approach. *Information Systems Frontiers*, *20*(3), 485–501. doi:10.1007/s10796-017-9820-9

House, J., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, *241*(4865), 540–545. doi:10.1126/science.3399889 PMID:3399889

Hsu, S. H., Wen, M. H., & Wu, M. C. (2009). Exploring user experiences as predictors of MMORPG addiction. *Computers & Education*, *53*(3), 990–999. doi:10.1016/j.compedu.2009.05.016

Hussain, H. Y., Ahmed, N., Hamid, M., & Tuffaha, M. (2020). Social Media, Internet and Electronic Devices Addiction among Children and Adolescents in Global Contexts Modern Cities. *Journal of Psychiatry Research Reviews & Reports*, *2*(1), 1–5. doi:10.47363/JPSRR/2020(2)104

Hussain, Z., Williams, G. A., & Griffiths, M. D. (2015). An exploratory study of the association between online gaming addiction and enjoyment motivations for playing massively multiplayer online role-playing games. *Computers in Human Behavior*, *50*, 221–230. doi:10.1016/j.chb.2015.03.075

Jaradat, M., Jibreel, M., & Skaik, H. (2020). Individuals' perceptions of technology and its relationship with ambition, unemployment, loneliness and insomnia in the Gulf. *Technology in Society, 60*(October), 101199. 10.1016/j.techsoc.2019.101199

Jin, B. (2013). How lonely people use and perceive Facebook. *Computers in Human Behavior*, *29*(6), 2463–2470. doi:10.1016/j.chb.2013.05.034

Jones, W. H., Rose, J., & Russell, D. (1990). Loneliness and social anxiety. In Handbook of social and evaluation anxiety. doi:10.1007/978-1-4899-2504-6_9

Kanat-Maymon, Y., Elimelech, M., & Roth, G. (2020). Work motivations as antecedents and outcomes of leadership: Integrating self-determination theory and the full range leadership theory. *European Management Journal*, (4), 555–564. Advance online publication. doi:10.1016/j.emj.2020.01.003

Kaur, A., & Noman, M. (2020). Investigating students' experiences of students as partners (SaP) for basic need fulfilment: A self-determination theory perspective. *Journal of University Teaching & Learning Practice*, *17*(1), 1–13. doi:10.53761/1.17.1.8

Khan, A., Uddin, R., & Islam, S. M. S. (2019). Social media use is associated with sleep duration and disturbance among adolescents in Bangladesh. *Health Policy and Technology*, *8*(3), 313–315. Advance online publication. doi:10.1016/j.hlpt.2019.05.012

Khan, H. U., & Hammami, H. (2018). Measuring internet addiction in Arab based knowledge societies: A case study of Saudi Arabia. *Journal of Theoretical and Applied Information Technology*, *96*(6), 1500–1518. doi:10.1504/IJBIS.2019.103075

King, D. L., & Delfabbro, P. H. (2014). The cognitive psychology of Internet gaming disorder. *Clinical Psychology Review*, *34*(4), 298–308. doi:10.1016/j.cpr.2014.03.006 PMID:24786896

Korpershoek, H., King, R. B., Mclnerney, D. M., Nasser, R. N., Ganotice, F. A., & Watkins, D. A. (2021). Gender and cultural differences in school motivation. *Research Papers in Education*, *36*(1), 27–51. doi:10.1080/02671522.2019.1633557

Kuss, D., Louws, J., & Wiers, R. (2012). Online Gaming Addiction? Motives Predict Addictive Play Behavior in Massively Multiplayer Online Role-Playing Games. *Cyberpsychology, Behavior, and Social Networking*, *15*(9), 480–485. doi:10.1089/cyber.2012.0034 PMID:22974351

Lafrenière, M. A. K., Verner-Filion, J., & Vallerand, R. J. (2012). Development and validation of the Gaming Motivation Scale (GAMS). *Personality and Individual Differences*, *53*(7), 827–831. doi:10.1016/j.paid.2012.06.013

Lahat, A., Tang, A., Tanaka, M., Van Lieshout, R. J., MacMillan, H. L., & Schmidt, L. A. (2018). Longitudinal Associations Among Child Maltreatment, Resting Frontal Electroencephalogram Asymmetry, and Adolescent Shyness. *Child Development*, *89*(3), 746–757. doi:10.1111/cdev.13060 PMID:29577245

Leary, M. R. (1995). *Self-presentation: Impression management and interpersonal behavior*. Brown & Benchmark Publishers.

Lemercier-Dugarin, M., Romo, L., Tijus, C., & Zerhouni, O. (2021). "Who Are the Cyka Blyat?" How Empathy, Impulsivity, and Motivations to Play Predict Aggressive Behaviors in Multiplayer Online Games. *Cyberpsychology, Behavior, and Social Networking*, *24*(1), 63–69. doi:10.1089/cyber.2020.0041 PMID:33232619

Levenson, J. L. (Ed.). (2018). *The American Psychiatric Association Publishing Textbook of Psychosomatic Medicine and Consultation-liaison Psychiatry*. American Psychiatric Pub. https://books.google.com.kw/books?hl=en&lr=&id=-WZnDw AAQ BAJ& oi=fnd& pg=PP 1&dq= America n+Psych iatric+ Association &ots=5dv CIL vT-9&sig=Dn 2nL328miH0c8ZVs EGwy__UJ8I&redir _esc=y#v=on epage&q=A mericanP sychiatricAssociation&f=false

Liu, C. C., & Chang, I. C. (2016). Model of online game addiction: The role of computer-mediated communication motives. *Telematics and Informatics*, *33*(4), 904–915. doi:10.1016/j.tele.2016.02.002

Liu, J., Bowker, J. C., Coplan, R. J., Yang, P., Li, D., & Chen, X. (2018). Evaluating Links Among Shyness, Peer Relations, and Internalizing Problems in Chinese Young Adolescents. *Journal of Research on Adolescence*, (May). Advance online publication. doi:10.1111/jora.12406 PMID:29777546

Liu, Y., Dupre, K., & Jin, X. (2020). A systematic review of literature on contested heritage. *Current Issues in Tourism*. Advance online publication. doi:10.1080/13683500.2020.1774516

Longstreet, P., Brooks, S., & Gonzalez, E. S. (2018). Internet addiction: When the positive emotions are not so positive. *Technology in Society*, (November), 1–10. doi:10.1016/j.techsoc.2018.12.004

Marttila, E., Koivula, A., & Räsänen, P. (2021). Does excessive social media use decrease subjective well-being? A longitudinal analysis of the relationship between problematic use, loneliness and life satisfaction. *Telematics and Informatics*, *59*, 101556. doi:10.1016/j.tele.2020.101556

McClelland, D. C. (1961). *The achieving society* (15th ed.). Simon and Schuster. https://books.google.com. kw/boo ks?hl=en& lr=&id=Rl2 wZw9AF E4C&oi= fnd&pg=PA 1&dq=The+ac hieving +society.&ot s=NHSe WenCC9&si g=IaGCCb CxdUD_KnQ lPEU W-0-xZnI& redir_esc=y# v=onepage &q=Theachieving society.&f=false

McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *52*(1), 81–90. doi:10.1037/0022-3514.52.1.81 PMID:3820081

Meena, M. E., Kang, S., Nguchu, B. A., Milly, N., Makwetta, J. J., & Fomude, A. H. (2021). Empirical Analysis of Factors Contributing to Smartphone Addiction. *Open Journal of Business and Management*, *9*(01), 213–232. doi:10.4236/ojbm.2021.91012

Ntoumanis, N., Ng, J. Y. Y., Prestwich, A., Quested, E., Hancox, J. E., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Lonsdale, C., & Williams, G. C. (2021). A meta-analysis of self-determination theory-informed intervention studies in the health domain: Effects on motivation, health behavior, physical, and psychological health. *Health Psychology Review*, *0*(0), 1–31. doi:10.1080/17437199.2020.1718529 PMID:31983293

Peng, W., & Liu, M. (2010). Online gaming dependency: A preliminary study in China. *Cyberpsychology, Behavior, and Social Networking*, *13*(3), 329–333. doi:10.1089/cyber.2009.0082 PMID:20557254

Peplau, L. A., & Perlman, D. (1982). Perspectives on loneliness. In *Loneliness: A sourcebook of current theory, research, and therapy* (pp. 1–20). John Wiley. https://ci.nii.ac.jp/naid/10019739628/#cit

Peterson, C. (1988). Explanatory Style as a Risk Factor for Illness. *Cognitive Therapy and Research*, *12*(2), 119–132. doi:10.1007/BF01204926 PMID:3418489

Peterson, C., Bishop, M. P., Fletcher, C. W., Kaplan, M. R., Yesko, E. S., Moon, C. H., Smith, J. S., Michaels, C. E., & Michaels, A. J. (2001). Explanatory style as a risk factor for traumatic mishaps. *Cognitive Therapy and Research*, *25*(6), 633–649. doi:10.1023/A:1012945120821

Punyanunt-Carter, N. M., De La Cruz, J. J., & Wrench, J. S. (2017). Investigating the relationships among college students' satisfaction, addiction, needs, communication apprehension, motives, and uses & gratifications with Snapchat. *Computers in Human Behavior*, *75*, 870–875. doi:10.1016/j.chb.2017.06.034

Rajab, A. M., Zaghloul, M. S., Enabi, S., Rajab, T. M., Al-Khani, A. M., Basalah, A., Alchalati, S. W., Enabi, J., Aljundi, S., Billah, S. M. B., Saquib, J., AlMazrou, A. R., & Saquib, N. (2020). Gaming addiction and perceived stress among Saudi adolescents. *Addictive Behaviors Reports*, *11*(February), 100261. Advance online publication. doi:10.1016/j.abrep.2020.100261 PMID:32467850

Rogers, E. M. (1983). *Diffusion of innovations.* Macmillan Publishing Co.

Rouibah, K., & Abbas, H. (2006). A modified technology acceptance model for camera mobile phone adoption: Development and validation. *ACIS 2006 Proceedings - 17th Australasian Conference on Information Systems*.

Rouibah, K., Abbas, H., & Rouibah, S. (2011). Factors affecting camera mobile phone adoption before e-shopping in the Arab world. *Technology in Society*, *33*(3-4), 271–283. doi:10.1016/j.techsoc.2011.10.001

Rouibah, K., & Abbas, H. A. (2010). Effect of Personal Innovativeness, Attachment Motivation and Social Norms on the Acceptance of Camera Mobile Phones. *International Journal of Handheld Computing Research*, *1*(4), 41–62. doi:10.4018/jhcr.2010100103

Rouibah, K., & Hamdy, H. (2009). Factors Affecting Information Communication Technologies Usage and Satisfaction. *Journal of Global Information Management*, *17*(2), 1–29. doi:10.4018/jgim.2009040101

Russell, D., Peplau, L. A., & Ferguson, M. L. (1978). Developing a measure of loneliness. *Journal of Personality Assessment*, *42*(3), 290–294. doi:10.1207/s15327752jpa4203_11 PMID:660402

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, *55*(1), 68–78. doi:10.1037/0003-066X.55.1.68 PMID:11392867

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, *xxxx*, 101860. doi:10.1016/j.cedpsych.2020.101860

Salma, J., & Salami, B. (2020). Growing Old is not for the Weak of Heart": Social isolation and loneliness in Muslim immigrant older adults in Canada. *Health & Social Care in the Community*, *28*(2), 615–623. doi:10.1111/hsc.12894 PMID:31750986

Saquib, N., Saquib, J., Wahid, A. W., Ahmed, A. A., Dhuhayr, H. E., Zaghloul, M. S., Ewid, M., & Al-Mazrou, A. (2017). Video game addiction and psychological distress among expatriate adolescents in Saudi Arabia. *Addictive Behaviors Reports*, *6*(September), 112–117. doi:10.1016/j.abrep.2017.09.003 PMID:29450245

Saunders, P. L., & Chester, A. (2008). Shyness and the Internet: Social problem or panacea? *Computers in Human Behavior*, *24*(6), 2649–2658. doi:10.1016/j.chb.2008.03.005

Scealy, M., Phillips, J. G., & Stevenson, R. (2002). Shyness and anxiety as predictors of patterns of Internet usage. *Cyberpsychology & Behavior*, *6*(6), 507–515. doi:10.1089/109493102321018141 PMID:12556113

Schmidt, L. A., & Fox, N. A. (1995). Individual differences in young adults' shyness and sociability: Personality and health correlates. *Personality and Individual Differences*, *19*(4), 455–462. doi:10.1016/0191-8869(95)00083-I

Schroeder, J. E. (1995). Self-concept, social anxiety, and interpersonal perception skills. *Personality and Individual Differences*, *19*(6), 955–958. doi:10.1016/S0191-8869(95)00108-5

Seabrook, E. M., Kern, M. L., & Rickard, N. S. (2016). Social Networking Sites, Depression, and Anxiety: A Systematic Review. *JMIR Mental Health*, *3*(4), e50. doi:10.2196/mental.5842 PMID:27881357

Seay, A. F., Jerome, W. J., Lee, K. S., & Kraut, R. E. (2004). Project massive: A study of online gaming communities. *Conference on Human Factors in Computing Systems - Proceedings*, 1421–1424. doi:10.1145/985921.986080

Seki, T., Hamazaki, K., Natori, T., & Inadera, H. (2019). Relationship between internet addiction and depression among Japanese university students. *Journal of Affective Disorders*, *256*, 668–672. Advance online publication. doi:10.1016/j.jad.2019.06.055 PMID:31299448

Sers, O., Turel, O., Serenko, A., & Giles, P. (2011). Integrating Technology Addiction and Use: An Empirical Investigation of Online Auction Users. *MIS Quarterly, 35*(4), 1043–1061.

Shahnaz, I., & Karim, A. K. M. R. (2014). The Impact of Internet Addiction on Life Satisfaction and Life Engagement in Young Adults. *Universal Journal of Psychology*, *2*(9), 273–284. doi:10.13189/ujp.2014.020902

Social Media Insights. (2019). *Social Media Platforms Usage in Kuwait 2019 | WeAreSocial*. Social Media Insights.

Song, I., Larose, R., Eastin, M. S., & Lin, C. A. (2004). Internet gratifications and internet addiction: On the uses and abuses of new media. *Cyberpsychology & Behavior*, *7*(4), 384–394. doi:10.1089/cpb.2004.7.384 PMID:15331025

Stanger, N., Alnaghaimshi, N., & Pearson, E. (2017). How do Saudi youth engage with social media? *First Monday*. https://firstmonday.org/ojs/index.php/fm/article/download/7102/6101

Stritzke, W. G. K., Nguyen, A., & Durkin, K. (2004). Shyness and Computer-Mediated Communication: A Self-Presentational Theory Perspective. *Media Psychology*, *6*(1), 1–22. doi:10.1207/s1532785xmep0601_1

Teppers, E., Luyckx, K. A., Klimstra, T., & Goossens, L. (2014). Loneliness and Facebook motives in adolescence: A longitudinal inquiry into directionality of effect. *Journal of Adolescence*, *37*(5), 691–699. doi:10.1016/j.adolescence.2013.11.003 PMID:24321573

Tian, Y., Qin, N., Cao, S., & Gao, F. (2021). Reciprocal associations between shyness, self-esteem, loneliness, depression and Internet addiction in Chinese adolescents. *Addiction Research and Theory*, *29*(2), 98–110. doi:10.1080/16066359.2020.1755657

Uysal, A., & Yildirim, I. G. (2016). Self-determination theory in digital games. In *Gamer psychology and behavior* (pp. 123–135). Springer.

Vally, Z., & El Hichami, F. (2019). An examination of problematic mobile phone use in the United Arab Emirates: Prevalence, correlates, and predictors in a college-aged sample of young adults. *Addictive Behaviors Reports*, *9*(January), 100185. doi:10.1016/j.abrep.2019.100185 PMID:31193886

Vally, Z., Laconi, S., & Kaliszewska-Czeremska, K. (2020). Problematic Internet Use, Psychopathology, Defense Mechanisms, and Coping Strategies: A Cross-Sectional Study from the United Arab Emirates. *The Psychiatric Quarterly*, *91*(2), 587–602. doi:10.1007/s11126-020-09719-4 PMID:32103389

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly, 27*(3), 425–478. 10.2307/30036540

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), 186–204. doi:10.1287/mnsc.46.2.186.11926

Wang, X., Abdelhamid, M., & Sanders, G. L. (2021). Exploring the effects of psychological ownership, gaming motivations, and primary/secondary control on online game addiction. *Decision Support Systems*, *144*, 113512. doi:10.1016/j.dss.2021.113512

Ward, C. C., & Tracey, T. J. G. (2004). Relation of shyness with aspects of online relationship involvement. *Journal of Social and Personal Relationships*, *21*(5), 611–623. doi:10.1177/0265407504045890

Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. MIT Press.

Wheeler, D. L. (2001). The Internet and Public Culture in Kuwait. *Gazette (Leiden, Netherlands)*, *63*(2–3), 187–201. doi:10.1177/0016549201063002006

Williams, K. L., & Galliher, R. V. (2006). Predicting Depression and Self–Esteem from Social Connectedness, Support, and Competence. *Journal of Social and Clinical Psychology*, *25*(8), 855–874. doi:10.1521/jscp.2006.25.8.855

Wotton, R. E. (2021). Bidirectional effects between loneliness, smoking, and alcohol use: Evidence from a Mendelian randomization study. *Addiction (Abingdon, England)*, *116*(2), 400–406. doi:10.1111/add.15142 PMID:32542815

Yang, P., Xu, G., Zhao, S., Li, D., Liu, J., & Chen, X. (2021). Shyness and psychological maladjustment in Chinese adolescents: Selection and influence processes in friendship networks. *Journal of Youth and Adolescence*, *50*(10), 1–14. doi:10.1007/s10964-021-01415-1 PMID:33704650

You, Z., Zhang, Y., Zhang, L., Xu, Y., & Chen, X. (2019). How does self-esteem affect mobile phone addiction? The mediating role of social anxiety and interpersonal sensitivity. *Psychiatry Research, 271*(December), 526–531. 10.1016/j.psychres.2018.12.040

Yousef, S., Eapen, V., Zoubeidi, T., & Mabrouk, A. (2014). Behavioral correlation with television watching and videogame playing among children in the United Arab Emirates. *International Journal of Psychiatry in Clinical Practice*, *18*(3), 203–207. doi:10.3109/13651501.2013.874442 PMID:24329399

Zhang, X., Wu, Y., & Liu, S. (2019). Exploring short-form video application addiction: Socio-technical and attachment perspectives. *Telematics and Informatics*, *42*, 101243. doi:10.1016/j.tele.2019.101243

Zhang, Y., Qin, X., & Ren, P. (2018). Adolescents' academic engagement mediates the association between Internet addiction and academic achievement: The moderating effect of classroom achievement norm. *Computers in Human Behavior*, *89*(August), 299–307. doi:10.1016/j.chb.2018.08.018

Zhao, J., Song, F., Chen, Q., Li, M., Wang, Y., & Kong, F. (2018). Linking shyness to loneliness in Chinese adolescents: The mediating role of core self-evaluation and social support. *Personality and Individual Differences*, *125*(January), 140–144. doi:10.1016/j.paid.2018.01.007

Zimbardo, P. G. (1977). *Shyness: What it is, What to do about it?* Addison-Wesley Publishing Company.