

E-ENTERTAINMENT: FACTORS TO ONLINE GAME ADDICTION AMONG TAR UC STUDENTS IN KL

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ABSTRACT

Online gaming is now a well-known electronic entertainment for people all around the world, especially university students. However, the increasing popularity of online gaming may lead to addiction, a problem that has received significant attention. This study aims to identify the factors relating to online gaming addiction. Based on 118 responses collected from online questionnaires, the bivariate correlation test was employed to examine the relationship between depression, loneliness, motivation for escapism and motivation for achievement with online game addiction. Cohen's effect size f^2 for each path is calculated. The findings show that depression, loneliness, motivation for achievement and motivation for escapism have a high positive correlation with online game addiction with large effect size.

Keywords: *Online game addiction, depression, loneliness, motivation for achievement, motivation for escapism*

1.0 INTRODUCTION

Video games now have a widespread presence in electronic entertainment, supported by over 2 billion active gamers worldwide. The video games market is expected to be worth over USD90 billion by 2020, with online games making up a large portion of growth and revenues (McDonald, 2017). A good example of the popular online game Fortnite, which has an estimated 125 million players (Fortnite, 2018). It is estimated that the online gaming industry will continue to grow exponentially because of the COVID-19 lockdowns. Online gaming's popularity, especially among the youth and young adults can largely be caused by online games' ability to provide a form of escapism from the reality of the world and make people feel belonged in a community through the social aspects of the games (André et al., 2018).

However, despite the positive aspects of playing games, the increasing popularity of online games has caused detrimental effects as the amount of online gaming addiction (OGA) cases increased. Several consequences follow, ignoring responsibilities such as jobs and family, health problems and in the most extreme cases, deaths. The worries of OGA are enforced with the World Health Organisation (WHO) acknowledging "gaming" falls under the category "Disorders due to addictive behaviours", effectively treating gaming the same as alcohol, drugs and gambling (WHO, 2021). Rising cases of OGA leads to a question: "What makes people addicted to online gaming?". Despite the consequences of online gaming

addiction being well researched and known, there is a lack of research on why people get addicted to online gaming in the first place.

It is theorized that the factors that lead people interested in online gaming in the first place is what causes them to be addicted. Yee (2006), in his research, has identified several factors that cause people to be interested in a type of online game known as Massively Multiplayer Online Roleplaying Game. Among these factors are motivation for achievement and motivation for escapism. In another study, loneliness and depression are discovered to have a mutual enforcing loop with online gaming addiction (Kim et al., 2009; Burleigh, 2018).

An individual that is unsatisfied or disappointed in their lives may develop gaming motivation for escapism and achievement, which drive an individual to play online games. Gaming motivation strengthened by their psychological state eventually causes online games addiction. We have chosen depression and loneliness as our psychological factors since they are commonly faced by university students. Motivation for escapism and achievement are chosen for our gaming motive factor since they are logical derivations from an unsatisfied life. In short, this paper aims to prove psychological factors (depression and loneliness) and gaming motivations (escapism and achievement) are positively associated and are predictors of online gaming addiction.

2.0 LITERATURE REVIEW

2.1 Online Gaming Addiction (OGA)

Research on OGA has been done across various fields of knowledge, education, information systems, including social psychology, and psychiatry (Hsu et al., 2009; Xu et al., 2012; Kim et al., 2008). In a large-scale longitudinal study of 3034 elementary students in Singapore, pathological gaming, defined as gaming that resulted in a dysfunctional family, friends, and school relationships. It was also related to depression, social phobias, anxiety, and lower grades in 9% of the study participants (Gentile, 2011). Based on these estimates, the recent, significant increases in online gaming is alarming. Based on the 9% estimate, over 11 million Fortnite players may exhibit a harmful gaming pathology (Fortnite, 2018). Given the prevalence of online gaming with an estimated 2.2 billion active gamers worldwide, the problem may be even more substantial (McDonald, 2017).

2.2 Depression and OGA

Research theorizes that increased levels of depression are related to different forms of addiction (Griffiths et al., 2016). The possibility of depression leading to OGA may be explained based on addictions often functioning as maladaptive emotional regulation strategies (Stavropoulos et al., 2016). Based on the research, loneliness and depression were proven related to symptoms of pathological gaming in a mutually upholding cycle (Krossbakken et al., 2018). The researcher Taechoyotin (2020) has discussed that the person might feel stressed, depressed, or anxious by the problems in the real world and may choose to use the game world (where they feel safe and secure) to escape these feelings. Burleigh (2018) has identified that depressed adolescents were significantly more likely to be addicted to online games when they experienced stronger Game Avatar Relationships.

2.3 Loneliness and OGA

Loneliness can be defined as the unhappy and disturbing sentiment due to the absence of companionship. In general, it is assumed that loneliness relates to social isolation. However,

people can be lonely even when they are surrounded by other people. Accordingly, qualitative aspects of social relationships may be more closely connected to loneliness than quantitative ones. Based on the past research, a cross-sectional study conducted by Kim et al. (2009) indicated that a reciprocal relation between pathological gaming and loneliness among adolescents cognitive-behavioural model of PIU. The study showed that individuals who were lonely or did not have good social ability may develop strong compulsive Internet use behaviours. The researchers Jeong et al. (2015) have discussed that loneliness is positively related to game addiction. When people are socially excluded or feel lonely, they used to search for channels to gratify their needs or to relieve their stress. Access to online games is a relatively easy way to solve desire or release stress because online games are a channel close at hand. Thus, they can frequently contact online games rather than interact with others. Furthermore, the researcher Chen and Leung (2016) has discussed that loneliness was significantly linked to mobile game addiction.

2.4 Motivation for Escapism and OGA

Yee (2006) debated that motivation for escapism is one of the four components of game immersion. Escapism refers to a person's attempt to avoid thinking about or to run away from real-life problems by engaging in an online experience (Yee, 2006). The research published by Bányai et al. (2019) constructed a questionnaire that collected 4284 results from e-sport and recreational gamers. The results stated that the escapism motive appeared to be the common predictor of problematic gaming among both e-sport and recreational gamers. Another research analysed 27 studies, with only 7 studies with negative outcomes, 9 studies with positive outcomes and 11 studies having an escapism relationship with both mixed outcomes in a given independent study (Hussain et al., 2021). It was found that in western countries, escapism via video games held a stronger association with negative outcomes while in non-Western countries, escapism via video games is more likely to lead to positive outcomes. Another study, published by Šporčić and Glavak-Tkalić (2018) had gathered 509 young adults via questionnaire with the hierarchical regression analyses suggested that escapism is a significant predictor of problematic online gaming.

2.5 Motivation for Achievement and OGA

In a self-determination theory, competence, the feeling of the capability to perform tasks, is one of three basic inborn needs of human beings. In accordance with this, Yee (2006) suggests that in gaming, the sense of achievement originates from three components: advancement, mechanics, and competition. Advancement is the players' interest in gaining power and accumulating in-game wealth. Mechanics refers to players' interests in analysing the underlying rules, levelling up characters, and optimizing character performance. Competition refers to the desire to challenge and compete with other players.

Studies conducted in the past have suggested that specific psychological characteristics drive OGA. Yee (2006) collected online survey data from 30,000 users of Massively Multi-User Online Role-Playing Games (MMORPGs) over a period of three years to explore users' demographics, motivations, and derived experiences. His study reveals that male players were significantly more likely to be motivated by the achievement and manipulation factors (Yee, 2006). Following this framework, Chang et al. (2018) examined the mediational effects of multiple gaming motives, from online game involvement to problematic Internet use. They discovered that advancement motives have a positive relationship with online game

involvement. T'ng and Pau (2021) assessed 1175 Malaysia MOBA gamers to study the avatar in the relationship between motivations of gaming and OGA. The findings revealed that motivation of achievement, motivation of immersion, and identification of avatar positively predict OGA. Besides that, the results of Khan and Muqtadir's (2016) research indicated that problematic gamers had stronger motivation for socialization, achievement, and immersion compared to non-problematic gamers.

3.0 RESEARCH METHODOLOGY

Four factors that are deemed the most possible causes for gaming addiction in TAR UC students which are depression, loneliness, motivation for escapism, and motivation for achievement are selected for this study. The justifications are as follows.

Past studies suggest that MMO players create an avatar in which they often imbue part of their identity and idealized identity (Bessiere et al., 2007). This may prompt them to project their idealized selves onto their avatars as a way to regulate related depressive emotions (Bessiere et al., 2007). Therefore, we hypothesize that depression is related to online gaming addiction. Psychopathologies, including Attention-Deficit/Hyperactivity Disorder (ADHD) and depression, were the most significant factors of online gaming addiction in individuals. The idea is that people who suffer from psychological problems (e.g. loneliness) may use online or video games as a way to satisfy their needs, which cannot be fulfilled in real life so that they escape from negative moods. Consequently, emotionally susceptible individuals may be deeply immersed in virtual life. Thus, we hypothesize that loneliness is related to online game addiction.

A handful of research projects have suggested that escapism motivation increases the extent of online game playing (Yoo, Sanders and Cervený, 2018). We suggest that higher levels of engagement and more time spent on the game can afford players the opportunity to be more familiar with the game world and to acquire a sense of belonging and closeness, which, in turn, can lead to online game addiction. A study by Chang, Grace M.Y.Hsieh & Sunny S.J.Lin (2018) shows that the desire for advancement encourages players to stay in the game. Sepandar Sepehr & Milena Head (2018) also suggest that the perception of video game competitiveness is a strong predictor of gameplay satisfaction. Within a gaming environment, a player with the need for increased competence is likely to seek more power, higher-performing characters, and rare items to outperform others, which help generate feelings of capability. Therefore, we propose that the motivation for achievement keeps gamers engaged in the gaming environment, which, in turn, facilitates online game addiction. With this in view, the followings are hypotheses of this study:

- H1: Depression is positively related to TAR UC students online gaming addiction.
- H2: Loneliness is positively related to TAR UC students online gaming addiction.
- H3: Motivation for escapism is positively related to TAR UC students online gaming addiction.
- H4: Motivation for achievement is positively related to TAR UC students online gaming addiction.

To test our hypotheses, an online questionnaire is used. The questionnaire was distributed to TAR UC students in Google Forms from the 1st of August, 2021 until the 19th of September, 2021 (Figure 1). The questions are split into different sections with respect to which variable they are intended to gather data for. For determining the OGA of the individual, we use the Lemmens et al. (2009) OGA scale, which is a widely used game addiction scales. We adapted Yee's gaming motivation items to measure achievement

motivation and escapism motivation. For loneliness, the questions were crafted in regard to the UCLA loneliness scale (Version 3). As for depression, we referenced the Center for Epidemiologic Studies Depression Scale (CES-D) for the questions. The questions used to acquire data about the variables are as follow:

Game Addiction

1. I think about playing games all day long.
2. I often find I have to increase my playing time to get the desired enjoyment.
3. Me or others unsuccessfully tried to reduce my game use.
4. I feel anxious when I am unable to play games frequently.
5. I often have arguments with others (e.g. family, friends) over the time spent on playing games.
6. I often neglect other important activities (e.g., school, work, sports) to play games.

Depression

1. I lack the motivation to do simple things such as cleaning and showering.
2. I do not have hope for the future.
3. I have no goals, or have given up on them.
4. I feel worthless, and guilty when people care for me.
5. I often feel lost and confused.

Loneliness

1. I often feel that I am not close to anyone.
2. I often feel my interests and ideas are not shared by those around me.
3. I often feel I am isolated from others.
4. I often feel left out.

Escapism

1. I enjoy being immersed in a game world.
2. I often play so I can avoid thinking about some of my real-life problems or worries.
3. I often play to relax from the day's work.
4. It is important for me that the game allows me to escape from the real world.

Motivation for Achievement

1. It is important for me to level up my character as fast as possible.
2. It is important for me to acquire rare items that most players will never have.
3. It is important for me to become powerful in games I play.
4. It is important for me to accumulate resources, items or money.

Figure 1. Questionnaire Items.

5.0 RESULTS AND DISCUSSION

Analysis of the data shows that Cronbach's alpha is well above 0.94, which is indicative of a strong internal consistency of the questions. Table 1 shows the demographic information regarding the responses.

Table 1: Questionnaire respondents' demographic statistic.

	Frequency	Percent
Gender		
Female	35	29.7%
Male	83	70.3%
Programme		
Accounting	2	1.7%
Advertising	1	0.8%
Computer Science	1	0.8%
Corporate Administration	1	0.8%
Data Science	6	5.1%
Engineering	1	0.8%
Enterprise Information Systems	10	8.5%
FCCI	1	0.8%
Graphic Design	1	0.8%
Information Security	9	7.6%
Interactive Software Technology	6	5.1%
Internet Technology	15	12.7%
Logistics and Supply Chain Management	1	0.8%
Marketing	2	1.7%
Mass Communication	1	0.8%
Mechatronic Engineering	1	0.8%
Multimedia Design	1	0.8%
Software Engineering	3	2.5%
Software Systems Engineering	33	28.0%
Software Systems Development	18	15.3%
Architecture	1	0.8%
Finance and Investment	1	0.8%
International Business	1	0.8%
Mechatronic Engineering	1	0.8%
	118	100%

Pearson Correlation and Effect Size (Cohen's f^2) are shown in Table 2. Based on Table 2, there is a significant positive relationship between Depression and Online Game Addiction ($r = 0.531$, $\text{sig} = 0.000$) with large effect ($f^2 = 0.39$). Thus, H1 is accepted. Online games allow players to create an avatar that they may imbue their personality into. It is a possible driver to escape depressive feelings which leads to OGA. The result is consistent with the findings of Burleigh (2018) which demonstrated that depression is statistically significant related to OGA.

Table 2. Pearson Correlation and Effect Size.

	<i>Pearson Correlation</i>	<i>Sig</i>	<i>Mean</i>	<i>Std Dev</i>	<i>Cohen's f^2</i>
	Online Game Addiction				
Depression	0.531	.000	2.42	1.16	0.39

Loneliness	0.531	.000	2.79	1.13	0.39
Motivation for Escapism	0.571	.000	3.60	0.97	0.48
Motivation for Achievement	0.662	.000	3.22	1.11	0.78
Dependant Variable: Online Game Addiction (OGA)					
$f^2 \geq .02$ = small effect; $f^2 \geq .15$ = medium effect; $f^2 \geq .35$ = large effect (Cohen, 1988)					

Pearson Correlation for Loneliness and OGA is positive, $r = 0.531$ with effect size of $f^2 = 0.39$ (large effect). This concludes there is a high and positive correlation between Loneliness and OGA and practically significant in the real world (effects size Cohen's f^2 is large (Pritha, 2021)). Therefore, H2 is accepted in which there is a correlation between Loneliness and OGA. The social aspect of online games provides an easy way for social interaction for people who feel lonely. Other than that, online games provide anonymity and are less socially demanding. This could explain loneliness leading to addiction. The result is consistent with the findings of Jeong et al. (2015) which revealed that loneliness, aggression and depression predict OGA. When people are socially excluded or feel lonely, they used to search for channels to gratify their needs or to relieve their stress. Access to online games is a relatively easy way to solve desire or release stress because online games are a channel close at hand. Thus, they will rather choose to socialize in games, distancing themselves from others, which eventually leads to addiction.

Pearson Correlation for Motivation for Escapism and OGA is also positive, $r = 0.571$ with large effect size, $f^2 = 0.48$. Thus, H3 is accepted in which motivation for escapism is related to online gaming addiction and this is significant in the practical real world. The relationship of Motivation for Escapism is higher compared to Depression and Loneliness. This could be attributed to trending online games now that feature immersive worldbuilding. The result is consistent with the findings of (Hussain et al., 2021) which states that motivation for escapism is correlated with Online Gaming Addiction.

Based on Table 2, the Pearson Correlation for Motivation for Achievement and OGA is $r = 0.662$ which is a high correlation between Motivation for Achievement and OGA. Thus, H4 is accepted with the largest effect size, $f^2 = 0.78$. The acceptance of H4 suggests that our initial assumptions were correct, as people who view achievement as important may be attracted to online gaming. The result is consistent with the findings of T'ng et al. (2021) which revealed that motivation of achievement positively predicts OGA. Since it is easier to gain achievement within a virtual environment, motivation of achievement may drive players to play online games to satisfy their desire for achievement. This leads to increasing playtime to hunt for higher level of achievement, driving them to become addicted.

Table 3. Pearson Correlation between factors.

		DP	LON	ME	MA
DP	Pearson Correlation	-	0.642	0.362	0.443
	Sig. (2-tailed)		0.000	0.000	0.000
LON	Pearson Correlation	0.642	-	0.443	0.321
	Sig. (2-tailed)	0.000		0.000	0.000
ME	Pearson Correlation	0.362	0.443	-	0.516
	Sig. (2-tailed)	0.000	0.000		0.000
MA	Pearson Correlation	0.443	0.321	0.516	-
	Sig. (2-tailed)	0.000	0.000	0.000	
DP – Depression; LON – Loneliness; ME – Motivation for Escapism;					

MA – Motivation for Achievement

Additional statistical analysis is conducted to examine the correlation between factors and the result is shown in Table 3. It is found that there are significant positive relationship between the four factors especially between Depression and Loneliness ($r=0.642$, $\text{sig}=0.00$). It is interesting to further find out the correlation between factors that could possibly affect students addiction in the online gaming in the future research. For example, students that are lonely would probably have depression and this could cause the students to immerse in the virtual world of gaming.

6.0 CONCLUSIONS

In short, we have collected data from 118 respondents to answer our research questions and have proven that depression, loneliness, motivation for achievement and escapism have a positive relation with OGA and the effect sizes are large. Our results show that motivations for achievement and escapism are closely related to OGA. Although not as strong as the previous two factors, loneliness and depression are still related to OGA. This shows that all four factors are predictors of the tendency of OGA in a person. As these four factors are closely related, this seems to suggest that all four factors and OGA form a mutually reinforcing loop in which an individual unsatisfied with real-life gains online game addiction, which causes the individual to be more unsatisfied with real-life and becomes even more addicted.

Further research can be done to include the population from more universities or schools. It is also recommended to further identify factors that cause online game addiction with the consequences of OGA methods of OGA prevention in order to protect young generation from OGA.

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