

# ONLINE GAMING ADDICTION FACTORS AMONG TAR UC STUDENTS IN KL

(Date received: 12.01.2022/Date accepted: 25.04.2022)

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## ABSTRACT

Online gaming is a popular digital entertainment that people worldwide, including university students, are well-received. Consequently, addiction to online gaming is worrying, and this issue has received significant attention. We collected and analysed primary data to reveal the factors relating to online gaming addiction. We performed a bivariate correlation test to examine the relationship between online games addictions with the characteristics of depression, loneliness, motivation for escapism and motivation for achievement on the 118 responses that we collected from online questionnaires. We also calculated Cohen's effect size,  $f^2$ , for each path. The results show that those identified factors positively correlate with online game addiction with a large effect size.

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

## 1.0 OVERVIEW

Online gaming addiction (OGA) has been explored in various aspects, including social psychology and psychiatry (Hsu *et al.*, 2009; Xu *et al.*, 2012; Kim *et al.*, 2008). For example, pathological gaming was conducted on 3,034 elementary students in Singapore, resulting in 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 the 9% estimate, over 11 million Fortnite players may exhibit a harmful gaming pathology (Fortnite, 2018). Moreover, given the prevalence of online gaming, with an estimated 2.2 billion active gamers worldwide, the problem is alarming (McDonald, 2017). World Health Organisation (WHO) is monitoring this situation seriously and has classified 'gaming' under the category of "Disorders due to addictive behaviours" (WHO, 2021).

### 1.1 Depression and OGA

Increased levels of depression are related to different forms of addiction (Griffiths *et al.*, Stavropoulos *et al.*, 2016/2016). Whereas 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) had identified that depressed adolescents were significantly more likely to be addicted to online games when they experienced stronger Game Avatar Relationships.

### 1.2 Loneliness and OGA

Loneliness is not only related to social isolation but people can be lonely even when other people surround them. Based on a cross-sectional study conducted by Kim *et al.* (2009) a reciprocal relation between pathological gaming and loneliness among adolescents cognitive-behavioural model of PIU. The study showed that lonely individual or did not have good social ability may develop strong compulsive Internet use behaviours. Jeong *et al.* (2015) have discussed that loneliness is positively related to game addiction. Access to online games is an easy way to release tension because online games are a channel close at hand. Furthermore, Chen and Leung (2016) have discussed that loneliness was significantly linked to mobile game addiction.

### 1.3 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 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.

## 1.4 Motivation for Achievement and OGA

Yee (2006) suggested 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 optimising character performance. Finally, competition refers to the desire to challenge and compete with other players.

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 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, Khan and Muqtadir's (2016) research indicated that problematic gamers had stronger motivation for socialisation, achievement, and immersion than non-problematic gamers.

## 1.5 Recap

Online games are the major contributor to the video games market. This type of digital entertainment has an estimated revenue of over USD90 billion by 2020 (McDonald, 2017). Because of COVID-19 pandemic lockdowns, it is estimated that the online gaming industry will continue to grow exponentially. Popular online games like Fortnite have 125 million players (Fortnite, 2018).

Research shows that online games provide a form of escapism from the world's reality. Therefore, it continues to gain popularity among the youth and young adults (André *et al.*, 2018). However, on the downside, online games cause many cases of online gaming addiction (OGA).

In a study for an online game called Massively Multiplayer Online Roleplaying Game, the author, Yee (2006) showed that motivation for achievement and motivation for escapism has caused people to be engaged in the games. In another study, loneliness and depression have a mutual enforcing loop with online gaming addiction (Kim *et al.*, 2009; Burleigh, 2018).

In short, this paper aims to prove that psychological factors (depression and loneliness) and gaming motivations (escapism and achievement) are positively associated and are predictors of online gaming addiction.

## 2.0 RESEARCH METHODOLOGY

This section justified the chosen factors of depression, loneliness, motivation for escapism, and motivation for achievement as the possible causes of gaming addiction in TAR UC students.

Past studies suggest that MMO players create an avatar in which they often imbue part of their identity and idealised identity (Bessiere *et al.*, 2007). This may prompt them to project their idealised selves onto their avatars to regulate related depressive emotions (Bessiere *et al.*, 2007). Therefore, we hypothesise that depression is related to online gaming addiction. Furthermore, psychopathologies, including Attention-Deficit/Hyperactivity Disorder (ADHD) and depression, were the most significant factors of online gaming addiction in individuals.

People who suffer from psychological problems (e.g. loneliness) may use online or video games to satisfy their needs to escape from negative moods. Consequently, emotionally susceptible individuals may be deeply immersed in virtual life. Thus, we hypothesise 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 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 the 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.

Our research instrument, online questionnaire, was distributed to TAR UC students in Google Forms from the 1st of August, 2021 until the 19th of September, 2021 (Figure 1). We applied a simple random sampling technique in this research where the respondents were chosen randomly through the indiscriminate distribution of the questionnaire. We filtered the respondents who have no experience with online games and play games for less than an hour each week.

For determining the OGA of the individual, we use the Lemmens *et al.* (2009) OGA scale for determining the OGA of the individual. We adapted Yee's gaming motivation items to measure achievement motivation and escapism motivation. The questions were crafted with the UCLA loneliness scale (Version 3) for loneliness. As for depression, we referenced the

Center for Epidemiologic Studies Depression Scale (CES-D) for the questions.

With a thorough overview and background study of the research topic, we prepared our questionnaire consisting of the

sections below with their respective questions. Then, before actual data collection from the intended respondents, pre-test and pilot test were carried out by distributing the questionnaires to some peers to ensure the smoothness of the research process.

**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*

### 3.0 RESULTS AND DISCUSSION

The result of 0.94 of Cronbach's alpha test indicated a robust

internal consistency of the questions. Table 1 shows the respondents' demographic data.

*Table 1: Questionnaire respondents' demographic statistics*

|                                | Frequency | Percent |
|--------------------------------|-----------|---------|
| <b>Gender</b>                  |           |         |
| Female                         | 35        | 29.7%   |
| Male                           | 83        | 70.3%   |
| <b>Programme</b>               |           |         |
| 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%  |

The results of Pearson Correlation and Effect Size (Cohen's  $f^2$ ), as presented in Table 2 shows the 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. 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

|                                                                                                            | Pearson Correlation   | Sig  | Mean | Std Dev | Cohen's $f^2$ |
|------------------------------------------------------------------------------------------------------------|-----------------------|------|------|---------|---------------|
|                                                                                                            | 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 is 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 lonely people. 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.

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, which is significant in the real practical 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 OGA.

Based on Table 2, the Pearson Correlation for Motivation for Achievement and OGA is  $r = 0.662$ , 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.

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 |                     |       |       |       |       |



Table 3 shows the correlation results among the chosen. There is a significant positive relationship between the four factors, especially between Depression and Loneliness ( $r=0.642$ ,  $\text{sig}=0.00$ ). It is interesting to find out further the correlation between factors that could affect students addiction to online gaming in future research. For example, lonely students would probably have depression, which could cause the students to immerse in the virtual world of gaming.

#### **4.0 CONCLUSIONS AND FUTURE RECOMMENDATIONS**

Based on the data collected from 118 respondents through the online questionnaire, we have proven that depression, loneliness, motivation for escapism and achievement positively correlate with OGA and the effect sizes are large. Their respective Pearson Correlation results ( $r$ ) are 0.531, 0.531, 0.571 and 0.662. Whereas their Effect Size results (Cohen's  $f^2$ ) are 0.39, 0.39, 0.48 and 0.78, respectively.

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 associated with OGA. This shows that all four factors are predictors of the tendency of OGA in a person. This suggests that all four factors and OGA form a mutually reinforcing loop in which an individual unsatisfied with real-life is becoming increasingly addicted to online games.

For the sake of the young generation, further studies can include more factors of OGA and preventive measures for OGA. Moreover, the research outcomes can be a reference for other higher institutions to learn more about their students. ■

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