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SOCIAL PHOBIA AND MOTIVATIONS OF GAMING AS PREDICTORS OF INTERNET

GAMING DISORDER

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A Study of Social Phobia and Online Gaming Motivations

as Predictors of Internet Gaming Disorder

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APPROVAL FORM

This research paper attached here to, entitled "Social Phobia and Motivations of Gaming as predictors of Internet Gaming Disorder", prepared and submitted by Jacqueline Kon Jia Min and Low Su Rou in partial fulfillment of requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.

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(Ms. T'ng Soo Ting)

SOCIAL PHOBIA AND MOTIVATIONS OF GAMING ON IGD

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Abstract

Internet gaming as one of the most popular leisure activities worldwide, however it brings destructive impacts to one's mental health. There are widely documented detrimental impacts, including sleep disturbances, emotional problems, cognitive deficits, significant impairment of academic and daily functioning were found on people with IGD. The highly addictive genre - Multiplayer Online Battle Arena (MOBA) has exponentially become more popular in local context. The present study aims to examine how motivations of gaming (e.g., motivation of achievement, motivation of social, and motivation of immersion) together with social phobia were related to IGD symptoms among Malaysian MOBA gamers. A cross-sectional descriptive study was conducted with employment of purposive sampling method due to geographical dispersion of gamers and difficulty in tracking the exact location of MOBA gamers. A sample of 1,036 Malaysian MOBA non-professional gamers age ranging from 18 to 29 years (mean= 21.96 years), with at least 12 months of gaming experiences was collected. Analysis showed that all of the predictors significantly predicted IGD symptoms. Motivation of achievement, motivation of immersion and social phobia were positively predicted IGD symptoms, while the motivation of immersion was found to be the strongest predictor. Motivation of social reported negatively predicted IGD symptoms. Further study focuses on the use of gaming as a tool to socialize in relation to IGD symptoms are recommended.

Keywords: MOBA, Internet Gaming Disorder, Social Phobia, Motivations of Achievement,

Motivation of Social, Motivation of Immersion

DECLARATION

We declare that the material contained in this paper is the end result of our own work and that due acknowledgement has been given in the bibliography and references to ALL sources be they printed, electronic or personal.

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List of Abbreviations

APA   American Psychological Association

DSM-5   Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition)

IGD   Internet Gaming Disorder

IGDS9-SF   Internet Gaming Disorder Scale-Short Form

MOBA   Multiplayer Online Battle Arena

MMORPG   Massively multiplayer online role-playing game

SDT   Self-Determination Theory

SPS-6   Social Phobia Scale-Short Form

SPSS   Statistical Package for the Social Sciences

Chapter I

Introduction

Background of study

Internet use has increased dramatically after its invention. According to Statista (2018), there has been a constant rise in the number of Internet users worldwide, ranging from 1.02 to 3.58 billion from 2005 to 2017. There was a total of 80.1 percent of active Internet users reported in Malaysia (Department of Statistics Malaysia, 2018), with 21 percent of Multiplayer Online Battle Arena (MOBA) players, which has outdone the other nations across the globe (Harris, 2018). Internet has developed rapidly and utilized for various purposes, namely social application, information seeking, and entertainment use and gaming (Amiel & Lee Sargent, 2004).

With the increasing use of Internet in everyday life, the possibility for excessive undisciplined use has been instigated, which has shed light onto the emanation of Internet addiction (Griffiths & Wood, 2000). Internet addiction is identified as preoccupation of thoughts and excessive Internet use despite its obstructive outcomes (Tao et al., 2010), such as facing impaired daily functioning with poor school or work attendance (Ng & Wiemer-Hastings, 2005).

Digital gaming has been a constantly rising leisure activity among youths. Empirical studies have shown that some gamers exhibited dysfunctional and addictive behaviours (Grüsser, Thalemann, & Griffiths; 2007; Kuss, Griffiths, Karila, & Billieux, 2014). For instance, Fox (2015) has reported that a 17-year-old teenager from Russia died from thrombosis, an illness caused by clotted blood, after playing Defence of the Ancients (DOTA) for 22 days straight.

Similarly, a 32-year-old Taiwanese passed away from cardiac failure after binge-gaming for 3 days (Hunt, 2015).

Subsequently, Internet Gaming Disorder (IGD) was introduced and has been appended to section III of Diagnostic and Statistical Manual of mental disorders (DSM-5; American Psychiatric Association, 2013), warranting further empirical studies to confirm it as a mental disorder in subsequent modifications of the DSM (Petry, Rehbein, Ko, & O'Brien, 2015; Laconi, Pirès, & Chabrol, 2017). Internet Gaming Disorder (IGD) outlines nine DSM-5 IGD criteria with the formal diagnosis requires meeting five or more criteria within a 12-month period (APA, 2013).

Following this, the inclusion of IGD criteria into DSM-5 has caught the researchers' attention to study players' motivations of gaming which result in excessive gaming. Gamers' playing behaviours are influenced substantially by their motivations, for instance, their preferred playing style and their willingness to invest their time and effort in the games (Zhong & Yao, 2013). Taken into consideration, Yee (2006) categorized online gaming motivation into three dimensions, which are achievement, social, and immersion. These three online gaming motivations are significantly associated with amount of time gamer's devoted in playing, as players use video games as channel to escape themselves from reality, escapism has been found commonly associated with addicted players who display problematic gaming behaviour (Dauriat, et al., 2011; Hellstrom, Nilsson, Leppert, & Aslund, 2012; Kuss, Louws, & Wiers, 2012; Peng & Liu, 2010; Yee 2006).

Gaming researches have documented a positive relationship between social phobia and IGD symptoms (Sioni, Burleson, & Bekerian, 2017; Wei, Chen, Huang, & Bai, 2012; Ko, et al., 2014; Weinstein, Dorani, Elhadif, Bukovza, & Yarmulnik, 2015). Internet use serves as a

platform for low-ego strength people to socialize with others by alleviating with their social fears (Shepherd & Edelmanm, 2005), as they enable to focus entirely on internet by isolating themselves from other form of social contacts (Young, 1998). Likewise, online games assemble most of the features of Internet communication functions, specifically anonymous and instant interaction by building up virtual connection and establish virtual communities. As the result of these characteristics, online games have seems as highly attractive to individual who utilize internet for social excitation (Lo, Wang, & Fang, 2005).

Prior researches have made great efforts in studying Massively Multiplayer Online Role-Playing (MMORPGs) and other related risk factors (Dauriat, et al., 2011; Hussain & Griffiths, 2009; Kuss et al., 2012; Smahel, Blinka, & Ledabyl, 2008), however, MOBAs, acting as one of the largest emerging social game genre in Malaysia, is not being well-studied in researches. MOBA and MMORPG share similar background, namely recruiting two teams of members to fight against one another and destroy the opponent's base, as the gamers play and coordinate collaboratively with other gamers to obtain similar goals (Tyack, Wyeth, & Johnson, 2016). Contrarily, MOBA differs from MMORPG that it does not involve everlasting virtual worlds, despite containing similar technology features and social interaction (Billieux, Deleuze, Griffiths, & Kuss, 2015; Nuyens et al., 2016). Notably, MMORPG are less demanding for designing a well-crafted difficulty level to well-matched avatars whereby MOBA provokes more frustration with limited autonomy and greater difficulties (Johnson, Nacke, & Wyeth, 2015). MOBA's complex advancement structure requires deliberate thinking and concentration with high commitment, facilitating excessive gaming and formation of addictive behaviour patterns (Johnson et al., 2016; Nuyens, et al., 2016; Tyack et al., 2016).

Recently, Malaysian Youth Policy (2015) has just announced that Malaysian youths have been assigned to a newly defined age range, which is from above 15 years old to below 29 years old. Even though studies have indicated that youths are relatively more vulnerable to addiction (Balogh, Mayes & Potenza, 2013; Saunders et al., 2017), they have been neglected in this research area with plenty of studies focusing on adolescents (Hellstrom et al., 2012; Ko, Yen, Chen, Chen, & Yen, 2005; Wan & Chiou, 2006). Likewise, Gentile and other researchers (2011) found that youths who have higher potential in becoming pathological gamers display characteristics of higher impulsivity, lower social ability and empathy, followed by poorer emotional skills, indicating the risks exposed to youths in developing pathological gaming. Moreover, initial exposure before young age found typically at higher risk in developing substance dependence. Furthermore, Schramm-Sapyta, Walker, Caster, Levin, and Kuhn (2009) have discovered that withdrawal effects are relatively less sensitive among adolescents in preventing themselves from addictive substance seeking. Therefore, the present study is determined to investigate the influence of social phobia and online gaming motivations on Internet gaming disorder among Malaysian MOBA players who age from 18 to 29 years old.

Problem statement

According to Statista (2018), 1 out of 2 Malaysians are actively engaged in virtual gaming, constituting 31 percent of them spending 1 to 3 hours on gaming per week. Consistent online gaming hours surpassing the duration of about 2 hours per week is found to be disruptive to psychological functioning (Przybylski & Weinstein, 2017). As pointed out by Mak et al. (2014), Malaysia's IGD prevalence rate was 19%, being the 3rd among six Asia countries, namely China, Hong Kong, Japan, South Korea and Philippines. The lives of youngsters nowadays are so occupied with online gaming, to the extent of spending 10 or more hours

gaming per day (Achab et al., 2011). In spite of that, Malaysians gamers' awareness on gaming addiction is still relatively low.

Following this, scholars have associated IGD with ample negative consequences, namely anxiety, depression and social phobia, sleep difficulties, poor academic or work performance, poor social competence, loneliness and suicidal ideation, escapism from undesired life events and low life satisfaction and death (Allen & Anderson, 2018; Bargeron & Hormes, 2016; Gentile et al., 2011; Hellstrom et al., 2012; Zhong & Yao, 2013). Additionally, a relatively high level of acceptance among society towards Internet gaming was reported by Balogh et al (2013), which could have explained the reason the masses overlook the severity of IGD and its risk factors. High acceptance of gaming among adolescents had led them in neglecting the risk of becoming addictive (Wang et al., 2014), as gamers seek pleasure legally without others' interruption. Therefore, despite the wide penetration of gaming in everyone's daily life, the society's attitudes towards the constantly arising severity of IGD remain ignorant.

Moreover, despite identifying IGD's definition and diagnostic criteria in DSM-5, it remains as a debatable issue (Király, Griffiths, & Demetrovics, 2015). It has been proposed explicitly in DSM-5 that IGD includes excessive gaming on both online and offline platforms. However, the noun "Internet" in IGD has been used conventionally defined as an electronic gaming necessity while the terminology signified the definition and diagnostic criteria for certain Internet practice (Laconi et al., 2017). Criticisms have also been made against the formation of IGD criteria which have been extracted from compulsive gambling and substance use disorders that are invalid to all populations and situations (Kardefelt-Winther, 2014). It has caused not only wrong interpretations but also reflected a deficiency in clarity of classification and distinction between Internet addiction and Internet-related disorders (Király et al., 2015; Rehbein & Mößle,

2013). Since IGD has been introduced in section III of DSM-5 recently, the information is sparse with limited exploration performed.

Dauriat et al. (2011), Nuyens et al. (2016), and Tyack et al. (2016) have also noted that there has been a growing body of evidence for MMORPG researches, however, the factors associated with excessive gameplay on MOBA are still largely unexplored. In spite of League of Legends (LoL) becoming the current most popular game with a substantial proportion of 100 million players worldwide in 2017 (Statista, 2018), studies done on MOBA is comparatively sparse compared to MMORPG. Following this, Ng and Wiemer-Hastings (2005) had outlined that MMORPG players were more satisfied with pleasure gained from the social aspect of game compared to real world, and players did not display addictive symptoms to MMORPG as they perceive MMORPG as the alternative form for social entertainment. Different from MMORPG, MOBA is discovered to be relatively more challenging, thereby results have shown that MOBA players experience lesser autonomy and greater frustration (Johnson et al., 2015). Following this, Tyack et al. (2016) has also pointed out that MOBA appears to occupy players' lives more saliently. These findings have led Nuyens et al. (2016) to conclude that MOBA's presenting features impact the gamers differently with its distinctive game system and experience.

Correspondingly, according to Tyack et al. (2016), games' content, design, and its own attraction will influence people's eagerness to involve in playing. Various games are designed with different extent of autonomy assigned to the players, for instance, the command directly to their avatar, or tasks and goals committed. Along with designs that emphasize on provide substantial flexibility over movement and planning, options over missions and targets, gamers' autonomy is expected to improve. Additionally, external rewards are programmed to provide instant feedback to enhance the feeling of autonomy instead of being controlled within the games

(Przybylski, Rigby, & Ryan, 2010). Similarly, Tamborini, Bowman, Eden, Grizzard, and Organ, (2010) also outlined game characteristics, for instance, game controls and gaming social environment, are able to fulfill various needs associated with psychological well-being.

Preliminary studies have tied IGD with several predictors, namely social phobia (Sioni,et al., 2017; Wei et al., 2012; Ko, et al., 2014;Weinstein et al., 2015) and online gaming motivation (Graham & Gosling, 2013; Kuss et al., 2012; Yee, 2006; Zhong & Yao, 2013). However, a dichotomy was discovered between the effects of social play. There are ample of negative consequences associated with IGD, such as social isolation and social phobia (Sioni et al., 2017; Wei et al., 2012; Ko et al., 2014; Weinstein et al., 2015), nonetheless, an inconsistent finding has been highlighted by indicating that virtual friendships help increase mental welfare (Vella, Johnson, & Hides, 2015). Studies done by Frostling-Henningsson (2009) and Tyack et al. (2016) have also further supported previous finding that virtual friendships provide emotional support and act as a distraction in reducing the emotional burden of the real-life issues. Similarly, an inconsistent research related to online gaming motivation was reported. Yee (2006) has also noted that socializing was not contributed to problematic gaming behaviour, however, on the other hand, Dauriat et al. (2011) pointed out that socializing was a significant predictor in predicting additive gaming behaviour.

Further, the emphasis to study association between IGD and related factors should be placed on youths. Studies have been highlighted youths as the potential risk group in developing addiction as supported by Balogh et al. (2013), and Saunders et al. (2017) have also evinced that youths are relatively more vulnerable to developing addictions, and addictions developed during this period are more likely to further evolve into lifelong addictions (Jordon & Andersen, 2016).

Additionally, early exposure of substance before young age was reported having higher risk in developing substance dependence, as protective factor of withdrawal effects is relatively less sensitive among youngsters in avoiding themselves from addictive substance seeking (Schramm-Sapyta et al., 2009). It highlights the high probability for youths to develop gaming dependency as games are perceived as harmless leisure activity by the society with high level of acceptance (Wang, et al., 2014).

Taking together the severity of Malaysian gaming issues among youths and criticisms against the conceptualization of IGD, it was found noteworthy to investigate the predictors of IGD in Malaysia. As most of the studies had been conducted in western context, with self-worth, playing motivations, risk factors and negative consequences in relation to IGD (Beard & Wickham, 2016; Dauriat, et al., 2011; Gentile et al.., 2011; Hellstrom et al., 2012; Kuss et al, 2012). Nevertheless, there has not been any previous studies conducted in examining youths' motivation in gameplay and social phobia in predicting Internet Gaming Disorder. Thus, the present study attempts to examine the influence of social phobia and online gaming motivations on Internet gaming disorder respectively, offering additional evidences to existing literature for a deeper understanding. Hence, it is vital that a quantitative study to be conducted to determine how social phobia and online gaming motivations predict IGD symptoms.

Research Questions

Do motive of achievement, motive of social, motive of immersion and social phobia predict Internet gaming disorder positively?

Research Objectives

This study aims to examine the prediction of Internet gaming disorder by social phobia and online gaming motivations among Malaysian MOBA players.

1. To investigate the prediction of internet gaming disorder by online gaming motivations and social phobia among Malaysian MOBA players.

   1.1 To study the prediction of internet gaming disorder by motives of achievement among Malaysian MOBA players.

   1.2 To determine the prediction of Internet gaming disorder by motives of social among Malaysian MOBA players.

   1.3 To identify the prediction of Internet gaming disorder by motives of immersion among Malaysian MOBA players.

2. To inspect the prediction of Internet gaming disorder by social phobia among Malaysian MOBA players.

Research Hypotheses

H1: Motive of achievement predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.

H2: Motive of social predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.

H3: Motive of immersion predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.

H4: Social phobia predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.

Significance of Study

Regardless of the debate with respect to the definition and diagnostic criteria of IGD in DSM-5 (Király et al, 2015), this study attempts to contribute to a growing literature in conceptualizing the criteria of IGD, identifying the role of online gaming motivations and social phobia in predicting Internet gaming disorder among Malaysian MOBA players. In addition, empirical evidence will be provided to show that including motivational factors is beneficial in explaining excessive use of gaming among certain group of population regardless the negative consequences.

Moreover, this research will focus on MOBA game genre, as MOBA games are featured with its team combat that is highly dynamic which requires substantial amount of tactics and skills to victory (Yang, Harrison, & Roberts, 2014). By conducting a research on MOBA, which is the most popular game genre in Malaysia, it is likely that this research will serve as the pioneer in exploring MOBA gaming trend in Malaysia. Since majority of the studies had been done in western context, this study may be an outset in linking the association between online gaming motivations, social phobia, and Internet gaming disorder in Asia context, specifically Malaysia.

This study may also eventually provide implications for mental health professionals, parents, social scientists, psychologists and policy makers as it helps in providing information on the strengths of online gaming motivations and social phobia on Internet gaming disorder. In turns providing baseline information up to date. Simultaneously, future researcher who are interested in doing more advanced work on the related topic will be benefited in providing related insights.

As Malaysia's prevention steps has been largely piecemeal, the present study intends to raise Malaysians' awareness on the severity of IGD and the consequences associated with it,

drawing more attention to the disorder for more comprehensive action, so prevention could be taken before the phenomenon worsens.

Conceptual Definition

Internet Gaming Disorder. IGD consists of extravagant gaming not only via the Internet but also the non-Internet sources (APA, 2013). The noun "Internet" preludes it from gambling disorders (Petry et al., 2014).

Online Gaming Motivations. Inner force of individuals that drives them to play online video game and pursue anticipated achievements (Kunda, 1990; Yee, 2006).

Social Phobia. The distinguishing aspects of social phobia is its extravagant obsession with one's perceived flaws in oneself in the context of social competence, anxiety symptoms and/or physical appearance that could be openly vulnerable to scrutiny as well as potential criticism by the appraisal of others (Moscovitch et al., 2013). Social comments is an influencing factor of self-evaluation (Korn, Prehn, Park, Walter, & Heekeren, 2012).

Operational Definition

Internet Gaming Disorder. Internet Gaming Disorder refers to a problematic excessive gaming behaviour which heavily affects one's daily functioning and causes psychological impairment. IGD can be measured by Internet Gaming Disorder Scale – Short Form (IGDS9-SF) is a 9 items scale constructed by Pontes & Griffiths (2015) is used to access the severity of IGD by examining both online and offline gaming activities occurring over a 12-month period. The higher the score, the more severe the degree of internet gaming disorder.

Online gaming motivations. Online Gaming Motivations Scale developed by Yee (2007) has been used to access the motivations of gamers in playing games. It measures based on three dimensions which are achievement, social and immersion. The higher score indicated the stronger degree of online gaming motivations.

Social Phobia. Social phobia is demarcated by fears and dodging of social events, accompanied with a consistent negative view of the self. Social phobia can be measured by Social Phobia Scale -Short Form (SPS-6) is a 6 items scale developed by Peters, Sunderland, Andrews, Rapee, and Mattick (2012). The higher the score, the more severe the degree of social phobia.

Chapter II

Literature Review

Theoretical Framework

Self-Determination Theory. Deci and Ryan (2012) have introduced Self-determination theory (SDT), which is built on the foundation of human motivation, growth and well-being, comprising the degree of motivation and the importance of receiving feedback in motivating human behaviours. SDT acts as a beneficial tool in assisting individuals' self-growth (Deci & Ryan, 1985).

According to Ryan and Deci (2000), early empirical research on SDT have inspected the consequences of external rewards on intrinsic motivation, with the assumption that human is intrinsically driven. Following this, motivation which focuses on the external surrounding; better known as extrinsic is defined as a specific action carried out in exchange of a distinct gift; intrinsic motivation on the other hand is the counterpart of extrinsic motivation and it differs in its rewards which focuses more to personal gratification (Ryan & Deci, 2000). Further, SDT postulates that intrinsic motivation develops over time and plays an important role in learning and is hugely affected by the external environments. Individuals are contented and integrated into the sense of self with intrinsic motivations, contrarily, the external rewards and punishments impair oneself in both biological and psychological aspects (Deci & Ryan, 2008). External rewards and sanctions disrupt the individual's intrinsic motivation in accordance with their expectations of rewards and sanctions which then lead them to execute in certain behaviours, such as pursuing materialistic goods. To date, SDT revolves around 'psychological nutriments,

dynamic within social environments, biological supports, and inherent individual differences'
(Edward, Deci & Ryan, 2012).

The essence of a person's growth consists of three fundamental needs and nutritions
under specific situations (Ryan, 1995), comprising of competence, autonomy and relatedness
(Deci & Ryan, 2012). Zhao, Lu, Wang, and Huang (2011) have agreed that the tendency of a
person to be motivated intrinsically rises if a conducive condition with these three fundamental
psychological needs are met. The three psychological needs are competence refers to a sense of
accomplishment in mastering something that is viewed as important to the individual; autonomy
denotes a conscious decision making and free will in completing a task with a sense of awareness
and approval of one's own behaviour without feeling compelled by external forces; relatedness
concerns the feeling of connectedness with others in a meaningful manner (Deci & Ryan, 2000;
Sheldon & Filak, 2008).

As a result, receiving positive feedbacks fulfils the three psychological needs which
produce peak development and performance as well as nourishes an individual's intrinsic
motivation. Conversely, receiving negative feedback, like disapprovals and failures, undermines
intrinsic motivation. In short, individuals who perceive themselves as competent, autonomous
and connected individuals are motivated intrinsically, whereas individuals who perceive
themselves as incompetent, controlled and pressured as well as ostracized in the society erode
their intrinsic motivation.

Conceptual Framework
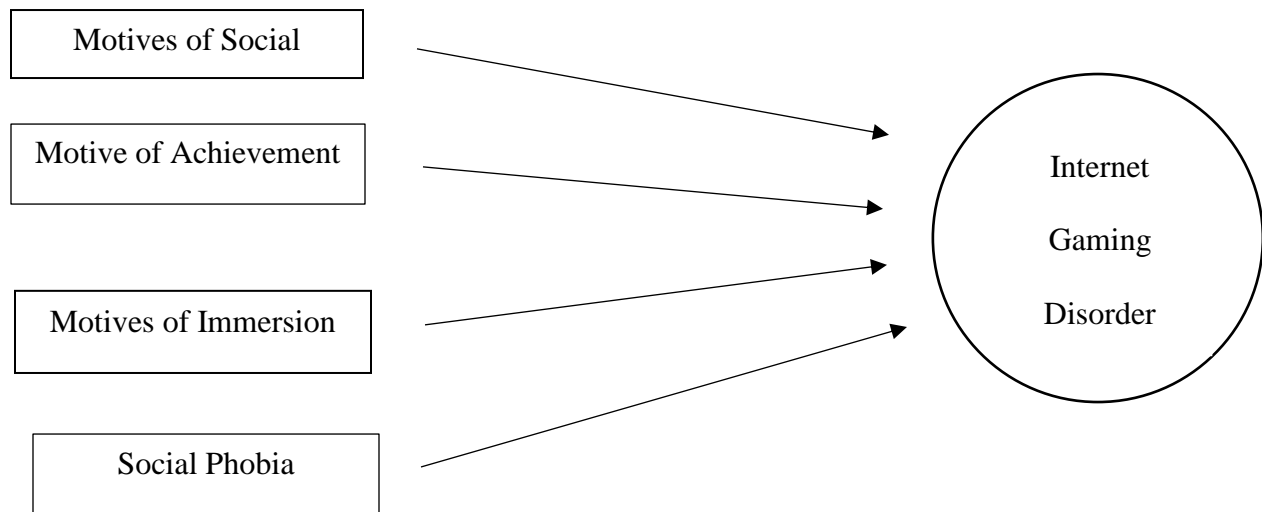
Figure 1.1 Conceptual Framework of the Study on "Social Phobia and Online Gaming Motivations as Predictors of Internet Gaming Disorder".

Figure 1.1 illustrates the conceptual framework of the present study on "Social Phobia and Online Gaming Motivations as Predictors of Internet Gaming Disorder". According to the framework, motive of achievement, motive of social, motive of immersion and social phobia predicts Internet Gaming Disorder symptoms positively.

Researches on SDT have truly mushroomed over the past decades, ranging from sports, education to health care (Deci & Ryan, 2008). Outdoor and physical activities are examples that depict SDT to be closely connected with enjoyment and internal gratification that acts as a persistent drive to an individual (Frederick and Ryan, 1995). The drive that moves a player's persistence in online gaming is derived from the feeling of thrill which plays a crucial part in a SDT context (Ryan, Scott, Rigby, Przybylski, 2006). Several factors that are closely associated

with pleasure are the contentment that comes from autonomy, competence and the necessity for

meaningful relationships (Tamborini et al., 2010). In addition, previous studies had defined

enjoyment as the gratification of inherent necessity, which stipulates feelings of satisfaction that

arises after the basic needs are met (Ryan et al., 2006). Description of intrinsic motivation as a

classification of motivation that is parallel with the involvement of computers thus stipulating a

compulsion to self-join while risking being subjected to objection and payment of necessary

(Frederick & Ryan, 1993, 1995). Majority of these players spend a certain amount of money

solely with the purpose to be a part of the gaming world and there has been a few players who

are condemned for this (Frederick & Ryan, 1993, 1995). Research has found gamers to be

engrossed into such games as it provides a certain sense of personal and internal gratification

(Malone & Lepper, 1987) as they pursue the thrill of the games (Bartle, 2004).

In conclusion, SDT implied that most of the players do not derive extra-games reward or

approval, as the intrinsic motivation is crucial type of motivation that viewed as essential for play

and sport, considering it as a type of motivation that interrelated to computer game participation

(Frederick & Ryan, 1993, 1995).

Motive of achievement and Self-determination Theory. Autonomy in digital gaming

refers to the variety of options offered to the players in the virtual world (Ryan et al., 2006). As

cited by Peng, Lin, Pfeiffer, & Winn (2012), the need for autonomy in the virtual world must be

highly satisfying because playing games in reality is a voluntary action. The need for autonomy

can be fulfilled with different game characteristics, for example, allowing the gamers to have

autonomy over the one own's strategies and character development followed by quests and

rewards (Ryan et al., 2006). Consistent findings have elucidated that autonomy is perceived to be

high among gamers when they are allowed to choose from the options and to participate in

activities of personal interest and value, like what quests to select, skills to acquire and the physical appearance of the avatar (Peng et al., 2012; Przybylski et al., 2010; Ryan et al., 2006). Empirical findings have also proposed several positive outcomes related to the need for autonomy in virtual gaming, specifically a greater degree of enjoyment (Przybylski et al., 2010; Tamborini et al., 2010) and greater inclination for future play (Przybylski et al., 2010). Deci and Ryan (2011) have explained that when individuals engage in the behaviour that is under the volitional control, they are able to select with more awareness, high adaptability thoughts, convey their passion and values in comparison to individual who react under non-volitional control and lead to personal gratification and optimal functioning.

Motive of immersion and Self-determination Theory. The need satisfaction for competence are found to be one of the most significant predictors of enjoyment in game experiences (Przbylski et al., 2009; Ryan et al., 2006; Tamborini et al., 2010) and desire for future gameplay (Przbylski et al., 2009; Ryan et al., 2006). Through satisfaction need of competence, autonomy and relatedness, players tend to immerse more in the gaming world, as it increases their self-confidence, in turn, increases their tendency to engage in the game again (Przybylski et al., 2010). Gamers enjoy by gaining control and possess competence through their virtual role in gaming world (Przybylski et al., 2010). Additionally, players are able to experience sense belongingness and support by engaging themselves in gaming world, it compensates their need for relatedness, which in turn, increases their preference for future play, and thus their addictive tendency (Hsu, Wen, & Wu, 2009; Ryan & Deci, 2011).

Correspondingly, MOBA games that comprised features competitive and cooperative team play found to enhance players' enjoyment, as players amuse in the social dynamic with acquaintances and enjoy trying new strategies with friends (Tyack, 2016; Przybylski et al.,

2010). Similarly, motive of immersion is fulfilled when players are concentrating in the abundance of gaming world, until an extent where some players overly-identify with their avatars (Bartle, 2003; Yee, 2006).

Motive of social and Self-determination Theory. A satisfaction of need for relatedness enriches mental welfare and intrinsic motivation (Peng et al., 2012) as well as helping people to connect and identify with one another (Deci & Ryan, 2001). Tamborini et al. (2010) postulated that playing games with companions was more satisfying than gaming alone. Similarly, a study conducted by Tyack et al. (2016) have shown that MOBA players started playing due to peer influence and preferred playing in teams. Correspondingly, MOBA offers collaborative teamplay, by supporting and assisting the teammates which is established on a shared goal and value important to the players (Ryan & Deci, 2000).

Social phobia and Self-determination Theory. As socially phobic individuals avoid interacting socially due to the embodiment of fears and adopted experiences of inadequacy throughout their lives, which have been developed through undesirable shamed childhood or adolescence experiences (Pinto-Gouveia, Castilho, Galhardo, & Cunha, 2006; Sioni et al., 2017), thereby resulting in an unmet need satisfaction of relatedness. Nevertheless, scientific findings have proven that the need satisfaction of relatedness can be fulfilled by developing new and virtual social relationships in the virtual worlds which act as an escape from interacting physically in reality (Deci & Ryan, 2011). As supported by Suler (1999)'s study that mankind possesses the ability to adjust to different perspectives to fulfill innate psychological needs. The anonymity of virtual worlds provides a platform for socially phobic individuals with low self-esteem to meet the need satisfaction of relatedness, which is the mankind's innate psychological desire (Ng & Wiemer-Hastings, 2005).

According to Ryan and Deci (2011), SDT has posited that social relationships foster the satisfaction of the three basic psychological needs (Deci & Ryan, 2011). Socially phobic individuals are still capable of developing intrinsic motivation to achieve goals under an autonomous and supportive socializing context that fulfils the need satisfaction of competence and relatedness.

Internet Gaming Disorder. According to APA (2013), delineated by DSM-5 has stipulated the first basis as excessive preoccupation which is defined as being enthralled by thoughts focusing on gaming while undertaking other tasks. Irritability, anxiety or sadness are some of the few characteristics experienced by an individual who is not engaged in gaming, comprises the second basis, withdrawal. Going down the list, growth of tolerance illustrates the need for extended duration of play, stemming from a blossoming craving to play more. The fourth criterion are the unsuccessful attempts to manage playing despite recognising the necessity to minimize playing. Following that, extravagant gaming has resulted in loss of interest in former pastimes. Even though there is a realisation of the issues caused, the sixth criterion illustrates an ongoing perpetuation of uncontrolled gaming. The seventh basis touches on the deceit of playing while basis eight is how playing games functions to distract oneself from reality and its associated issues and this is defined as escapism. The final criterion depicts the outcome of playing such as the loss or sacrifice of important relationships, academic or one's career.

The prevalence rate of IGD was reported to be higher among males than females. It is evident throughout several scientific studies, for instance, in Norway, males were six-fold higher to have IGD symptoms (Mentzoni et al., 2011), while in Singapore, males recorded 12.6 percent of prevalence rate as compared to females at 4.7 percent (Choo et al., 2010). Additionally, youngsters are believed to be more ubiquitous to IGD. Festl, Scharkow and Quandt (2013)

exemplified that adolescents aged 19 and below were more likely to be at risk of IGD in comparison to young adults aged 20 years and above, at 7.6 percent and 3.7 percent respectively.

Furthermore, IGD has been characterized by numerous negative symptoms, for example, depression (Mentzoni et al., 2011), anxiety (Caplan, 2007; Wei et al., 2012), social phobia (Gentile et al., 2011), low self-efficacy (Jeong & Kim, 2011), low self-esteem (Billieux et al., 2015; Caplan, 2007), aggressive and impulsive behaviors   (Bushman, Rothstein, & Anderson, 2010; Billieux et al., 2015; Gentile et al., 2011), suicidal ideation (Rehbein, Kleiman & Mössle, 2010), poor social competence and lower satisfaction with life (Festl et al.,2013).

In addition, Sioni et al. (2017) has revealed that identification with avatar is identified as one of the causal factors of IGD, implying that the stronger the avatar identification, the greater the prevalence of IGD symptoms. As the gamers identify psychologically and deeply with their avatars, they over-empathize with the avatar's experiences, resulting in unpleasant emotional states, such as anger and sadness (Smahel et al., 2008; Wei et al., 2012). The connection between the gamers and their avatars increases more investment psychologically and enhances more frequent and intense play, thereby ensuing in problematic gameplay behavior (Sioni et al., 2017).

Conceptualizing on Social Phobia. Clark and Wells (1995) have coined the term 'social phobia' as an individual's forceful yearning in forming pleasant impression of oneself to others with patent diffidence about one's ability in doing so; while Leary (1983) has conceptualized social phobia as an acute social anxiety caused by actual or imagined social judgment and is only provoked under certain social circumstances.

Socially phobic individuals are found disheartened from interacting socially by the encompassment of specious fears and adopted experiences of inadequacy (Sioni et al., 2017). They hold firm conviction towards an established set of conventions about themselves and the

community, making them believe that they are predisposed to threats, like devaluation and denial, for behaving in a maladroit and undesirable manner (Clark & Wells, 1995). Socially phobic individuals are characterized by features like low self-esteem (Billieux et al., 2015; Caplan, 2007), greater dissatisfaction with life (Festl et al., 2013), and an increased sense of sensitivity towards embarrassment, which have been developed through shamed childhood or adolescence experiences (Pinto-Gouveia et al., 2006).

Conceptualizing Social Phobia and Internet Gaming Disorder. Social phobia is one of the negative consequences accompanied by IGD symptoms (Gentile et al., 2011). Addictive gamers were found to exhibit symptoms such as 'social neglect, loss of interest in other leisure activities, social and psychological isolation' (Jeong & Kim, 2011) and engagement in escapism (Billieux et al., 2015).

As the criteria are outlined in DSM-5, an increased tolerance towards time spent on gaming and an inability to control gaming behaviors despite acknowledging the problems caused are problematic and addictive (Petry et al., 2015). Scientific findings have consistently discovered a positive relationship between time spent on online gaming and social phobia (Lo et al., 2005; Mazalin & Moore, 2004). Put simply, the more the socially phobic individuals are engaged in online gaming, the more likely they are to have IGD symptoms. Moreover, excessive time spent on online gaming is characterized by warnings related to psychosocial impairment, such as social phobia, anxiety, greater dissatisfaction towards life, depression and troubled by academic or vocational issues (Gentile, 2009; Mentzoni et al., 2011).

The development of relationships virtually assures and fulfills their unmet innate psychological needs for a sense of belongingness, approval seeking and perceived social competence (Beranuy, Carbonell & Griffiths, 2013; King & Delfabbro, 2014; Przybylski et al.,

2010; Sioni et al., 2017). Virtual gaming offers a safer platform with its anonymity, as it enables the gamers to decide on the quantity and deepness of social interaction through an online avatar, allowing them to interact and exploring different personalities safely, and socially withdraw at any time if they feel uncomfortable by logging out of the game (Lee & Stapinski, 2012). It is evident by The Chinese Annual Report of Online Games that the gamers' primary objective was to make friends (iResearch, 2005). In other words, engaging in game playing has become their coping mechanism for deficiencies in their life such as low sociability and relationship issues (Mannikko, Billieux, & Kaariainen, 2015).

Online Gaming Motivations. Online Gaming Motivations refer to the inner drive that urges gamer to play and seek for achievements through online video game (Kunda, 1990; Yee, 2006). In a re-conceptualization of ten traditional viewing motives (i.e.advancement, mechanics, competition, socializing, relationship, teamwork, discovery, role-playing, customization, and escapism), Yee (2006) proposed a typology of viewing online gaming motivations characterized by three distinctive dimensions. First, achievement aspect includes advancement, mechanics and competition. Second, social includes socializing, relationship and teamwork. Third, immersion includes discovery, role-playing, customization and escapism. Achievement-oriented gamer strive to gain power, status through advancing their skills and challenge other players They are urged in becoming powerful, progress fast in games and look for opportunities to obtain overt and tangible evidence of their success Social-oriented gamer intend to know new friends, maintain relationships with others, and seek for social support in virtual world. They view gaming as a platform to meet and communicate with others. Gaming world serves as the platform to provide emotional support among players. Furthermore, immersion-oriented gamer

found playing online video games to escape from reality or exploring the virtual world by adopting a different character such as avatar.

Online Gaming Motivations and Internet Gaming Disorder. Online video games offer an opportunity for people to involve in virtual world which substantially differs from real life. In this virtual world, players provided opportunity to makes new friends using character created aligned to their ideal identity. Additionally,players are provided room to achieve something impossible in reality within online games to fulfill their fantasy.

In order to come to an understanding about the usage patterns, in-game activities, and demographic variables in relation to player motivations, Kuss et al (2012) had investigated the interaction between online gaming motivations and addictive play behavior among MMORPGs gamers. Gaming motivations of mechanics and escapism were found significantly related to excessive gaming (Dauriat et al., 2011; Kuss et al., 2012). Players invest substantial amount of time and effort searching for best strategies in improving their performance, whereas enable them to transfer in-game accomplishments in enhancing their self-esteem (Snodgrass, Francois Dengah II, Lacy, & Fagan, 2013). In addition, players motivated by achievement and mechanics appeared in higher ranking in game, nevertheless if they are not motivated by discovery and cooperation with other players, additional time and effort are needed in order to achieve the same achievement. In short, it highlighted the reason players tend to immerse themselves and socialize with other gamers driven by motives of achievement (Billieux, et al., 2013).

Besides, study shown ample evidence highlighted escapism as one of the strongest intention that urges players to play (Dauriat et al., 2011; Kuss et al., 2012; Xu, Turel & Yuan, 2012). Given this particular group of players who immersed themselves in online video games to escape dissatisfied reality are referred as escapists (Zhong & Yao, 2013), to a certain extent, they

synchronize and immerse themselves with their game cognitively and affectively through their avatar-character (Bartle, 2003; Yee, 2006). This behavior of avoiding real-life issue by engaging in online video games is found related in regulating mood as escapists play to escape themselves from reality, negative mood, setbacks, failure or stress (Baumeister, 1991; Dauriat, et al., 2011; Lee & Shin, 2004). They keen to make use of online video game as channel to relax and reduce their stress (Lee & Shin, 2004). Virtual world enables players to get their mind off from their negative issues, problems, and stress temporarily from reality, in turns relieving their feeling of dissatisfaction (Wan & Chiou, 2006; Zhong & Yao, 2013). Rather than seeking for solutions for their real life issues, gamers acts irresponsibly by engaging themselves more frequently in gaming to evade from their duties (Zhong & Yao, 2013). Thus, it leads to negative consequences included insufficient of sleep, lack of concentration on academic conflicts (Hellstrom et al., 2012; Ko et al., 2005), additionally the disconnection between cyberspace leads to depression and interpersonal (Zhong & Yao, 2013), with most noticeably consequence of Internet Gaming Disorder that has been included in DSM-5 in 2013.

Previous research shown greater number of male play online games as to seek for feelings of achievement and maintain social connection with others, as male gamers found enhance their self-esteem by interacting with others who share the same interest on online games (Ko et al., 2005). Online gaming also serves as a buffer for unstable self-worth, which drives players playing to seek for sense of self-identification (Beard & Wickham, 2016), particularly for males who believed to have higher ego (White & Duda, 1994).

Contrast with previous research by Yee (2006), indicated socializing was not related to problematic gaming behavior (Dauriat, et al., 2011; Yee, 2006) other researchers found socializing significantly predict addictive behavior among MMORPGs players (Zhong & Yao,

2013). Actions such as becoming heroes, defeating evil and rescuing teammates are crucial in

forming meaningful social interactions (Snodgrass et al., 2013). In regard to this, previous

research is inconclusive in terms of the motives of socializing associate with problematic gaming

behavior.

Chapter III

Methodology

Research Design

As noted by Christensen, Johnson, and Turner (2014), a correlational study measures the relationship between variables and determines the degree of the relationship. Multiple variables are often used in correlational study to make predictions from one variable to the knowledge of the other variables (Christensen et al., 2014). Correlation study provides an observed pattern in the data that enables researchers to describe the relationship (Miller, 1994) and draw inferences between two and more variables (Green & Salkind, 2014). However, this ability to make an inference based on correlation is very restricted (Shaughnessy, Zechmeister, & Zechmeister, 2012). Following this, predictive study that uses regression analysis enable researchers to further identify and explain the observed patterns of data by fitting them into the linear model (Field, 2009). In light of this, the present study employed predictive research approach to identify and explain the patterns between social phobia and motivations of gaming on IGD among Malaysia youths.

Cross-sectional design is a study conducted at a specific time to describe the prevalence of an interested result of a targeted population, consisting of multiple age groups and socioeconomic classes (Alexander, Lopes, Ricchetti-Masterson, & Yeatts, 2015; Christensen et al., 2014), highlighting the variations that exist among different populations. Moreover, cross-sectional design has been widely used in predicting the risk factors and the interested outcome variable (Levin, 2006; Shaughnessy et al., 2012). Cross-sectional study design has also been applied in this study to minimize researchers' time and cost (Levin, 2006). By applying cross-

sectional descriptive approach in this study, it enables the data collection to occur within a short period of time with relatively low cost.

Respondents

The samples selection was made based on the inclusion criteria, which involved: (1) MOBA gamers; (2) aged between 18 to 29 years old; (3) with at least 12 months of gaming experiences; and (4) non-professional gamers. As specified by the Ministry of Youth and Sports Malaysia (2015), Malaysia youths aged from 15 to 29 years old. Nevertheless, despite the implementation of policy, MOBA gamers aged below 18 years old have been excluded in the present study. They were excluded due to an increased difficulty in obtaining immediate parental consent for research participation with geographical constraints. Moreover, the rationale of excluding professional gamers is because IGD symptoms are invalid to be identified when excessive game playing is mandatory for their occupation. The present study has collected a total sample of 1,036. Majority of the respondents were males (75.2%) and Chinese (45.1%) with a mean age of 21.96.

Sampling Method

Non-probability sampling method does not provide each element in the population an equal chance of being included (Etikan, Musa, & Alkassim, 2016; Shaughessy et al., 2012). In non-probability sampling method, a sample size is chosen among the mass to be representative of the whole (Kothari, 2004). Although Malaysian Communications and Multimedia Commission (MCMC, 2016) has documented 24.1 million (76.1%) of Malaysian Internet users and 13.8 million (43.7%) of online computer games players, to our best knowledge, no other sources have published the population size of MOBA gamers. Nevertheless, the accessibility to

various areas is restricted as the sample is geographically dispersed (Christensen et al., 2014). Thus, in order to enhance our accessibility to various locations, the present study has implemented non-probability purposive sampling method in the present study to draw a sampling frame among MOBA gamers.

In addition, purposive sampling involves a deliberate selection of respondents with predetermined criteria specified by the researchers, consisting the characteristics of the targeted population and the subjects who met the requirements (Christensen et al., 2014; Etikan et al., 2016; Tongco, 2007). Creswell and Clark (2017) have also noted that the selected respondents are proficient and well-informed of the researchers' topic of interest in purposive sampling method. To illustrate, the present study has adopted purposive sampling method in examining (1) Malaysian MOBA gamers; (2) aged between 18 to 29 years old; (3) with at least 12 months of gaming experience; and (4) non-professional gamers. Furthermore, purposive sampling helps maximize the understanding of a phenomena in the targeted population (Onwuegbuzie & Collins, 2007). Ritchie and Lewis (2013) have also indicated that a homogeneous sample group enables detailed investigation of study. In short, purposive sampling method has been a promising sampling method in the academic community with extensive empirical studies, specifically using this sampling method in collecting data from MOBA players sample (Djamaluddin, Kindangen, & Tielung, 2017; Dumrique & Castillo, 2018; King, Herd, & Delfabbro, 2017; King, Herd, & Delfabbro, 2018; Yang, Harrison, & Roberts, 2014).

Sample Size

Soper's Statistics Calculator software (2019) was used to compute sample size. Four important components were required for sample size calculation: (1) the probability of falsely rejecting the null hypothesis when it is true. A value of 0.05 is commonly used (Gogtay, 2010;

Noordzij, et al., 2010); (2) desired statistical power, the power represents the chance of avoiding

a false-negative conclusion (Gogtay, 2010; Noordzij et al., 2010); (3) anticipated effect size,

refers to the extent to which the phenomena is existing in the population (Cohen, 1998). Cohen

(1998) categorized value of effect size, f into small effect size: $f = .02$, medium effect size: f

$= .15$ and large effect size: $f = .35$; (4) number of predictors. Effect size of .14 was calculated by

summing the effect size of each predictor using formula of $R^2/ (1 - R^2)$, provided R^2 were

obtained from previous studies (Carlisle, 2017; Sioni & Burleson, 2017) and divided by the

number of predictors (see Appendix B, p.91). To sum up, effect size of .14, statistical power

level of .95, probability level of 0.05 and four predictors were included for sample size

calculation of 138 respondents (see Appendix C, p.92).

Location of Study

The present study was conducted and distributed across Malaysia. Malaysia is separated

into two main regions, which are West Malaysia and East Malaysia. West Malaysia consists of

eleven states which are Perlis, Kedah, Pulau Pinang, Perak, Selangor, Kelantan, Terengganu,

Pahang, Negeri Sembilan, Melaka, and Johor; while East Malaysia consists of Sarawak and

Sabah.

Instruments

Online Gaming Motivations Scale. Online gaming motivations scale is a 39-item

multidimensional scale developed by Yee (2007) to measure online gaming motivations of

gamers. It is categorized into three dimensions namely, achievement, social and immersion,

comprising of 14 items, 11 items and 14 items respectively.

Motive of achievement discussed innate psychological desires to pursue advancement and competition through discovering in-game mechanisms to optimize avatar's performance; motive of social elucidated emotional needs to connect in meaningful relationships that create a sense of belongingness; motive of immersion described intense game engagement to escape from real-life negative issues with role-playing (Yee, 2006).

The scale is computed on a five-point-fully-labeled construct-specific scale which ranges from 1 (*not at all important)* to 5 *(extremely important); 1 (never)* to 5 *(always); 1 (not enjoyable at all)* to 5 *(extremely enjoyable); 1 (not at all)* to 5 *(a great deal); 1 (much rather solo)* to 5 *(much rather group)*. In short, the greater the values, the higher motives in playing games.

In the present study, the overall scale obtained excellent reliability of ($\alpha = .93$) along with good reliability for motive of achievement ($\alpha = .90$); and motive of immersion ($\alpha = .88$) respectively. On the other hand, motive of social reported adequate reliability of ($\alpha = .63$). Examples of items for each type of motivation, achievement motivation, social motivation and immersion motivation respectively:

1. How important is it to you that your character is as optimized as possible for their profession/role? (Achievement)

2) How often do you find yourself having meaningful conversations with other players? (Social)

3) Trying out new roles and personalities with your characters. (Immersion)

Internet Gaming Disorder Scale-Short Form (IGDS9-SF). Internet Gaming Disorder Scale was developed by Pontes and Griffiths (2015) to measure IGD symptoms by examining both online and offline gaming activities that happen over a 12-month period. In the present study, IGD is not used as a diagnostic tool, but as a means in measuring IGD symptoms with

continuous scoring. It consists of nine items and is rated on a five-point Likert scale, ranging from 1 (*never*) to 5 (*very often*). Total scores are obtained by summing the gamer's answers, with higher scores being indicative of higher degrees of Internet gaming disorder. In the present study, IGD9-SF reliability was Cronbach's alpha (α =.81). Examples of items in IGDS9-SF:

1. Do you feel the need to spend increasing amount of time engaged gaming in order to achieve satisfaction or pleasure?

2. Have you deceived any of your family members, therapists or others because the amount of your gaming activity?

3. Have you continued your gaming activity despite knowing it was causing problems between you and other people?

Social Phobia Scale-Short Form (SPS-6). Social Phobia Scale-Short Form is a shorten self-reported scale with six-items by Peters, Rapee, Sunderland, Andrews, and Mattick, (2012) from original scale with 20 items by Mattick and Clarke (1998). SPS-6 is used to access the intensity of social phobia, such as the fear of having a meal with others; being watched or stared at; talking to people in authority; being criticised; and, speaking in public (Mattick & Clarke, 1998). SPS-6 is rated on a five-point Likert scale, ranging from 0 (*not at all characteristic or true of me*) to 4 (*extremely characteristic or true of me*). The total scores can be obtained by summing up, with higher scores signifying a higher degree of social phobia. A minimum score of 2 over the total score will be used to discriminate people with social phobia. The reliability obtained in the present study was Cronbach's alpha (α =.88). Examples of items in SPS-6:

1. I would get tense if I had to sit facing other people on a bus or train.

2. I can feel conspicuous standing in a line.

3. I worry I might do something to attract the attention of other people.

Procedure

Pilot study. A total 239 of participants was collected. 10 of them were removed due to

withdrawal upon completion, while 13 of them were removed for not fulfilling the inclusion

criteria. A total of 216 valid data was involved in pilot study to examine the reliability of

instruments. The pilot study exhibited 96% of response rate on the online survey. Overall

IGDS9-SF, SPS-6, and online gaming motivation scale displayed acceptable reliability with

Cronbach alpha of .70 and above as stated by Nunnally (1978). An online survey with the URL

link of (https://utarpsy.au1.qualtrics.com/jfe/form/SV_elCDVwQRN5f75k1) was created

through Qualtrics. Data was collected via online distribution of survey link on social media

platforms and gaming discussion Facebook groups, namely DOTA 2 Malaysia, DOTA 2 Snipe

Station, Dota 2 Unity Malaysia, Dota 2 VIP Malaysia, Kampar DOTA 2 Community, Komuniti

Dota 2 Malaysia, Dota 2 吹水站 – D2MY, Dota 2 华人凝集区(Dota 2 Chinese Community),

DOTA 2 Sabah, DOTA 2 Trader Malaysia – D2TM, Lapar Dota 2, League of Legends Malaysia,

Malaysia League of Legends, League of Legends Players (Malaysia), Mobile Legends

Terengganu, Mobile Legends Malaysia (MOBA), Mobile Legends Malaysia, Mobile Legends:

Bang Bang – Malaysia, Mobile Legend Sell & Buy Malaysia, Mobile Legend Malaysia

Community (WE ARE 1), Mobile Legends: Bang Bang (Malaysia), Mobile Legends MoBa

Malaysia, and Malaysia MOBA Players.

The online survey comprised of demographic variables and instruments, namely Online

Gaming Motivations Scale (Yee, 2007), Internet Gaming Disorder Scale–Short-Form (Pontes &

Griffiths, 2015), and Social Phobia Scale-Short Form (SPS-6) (Peters et al., 2012). The online

survey was distributed via Social Networking Sites (SNS), like Facebook and WhatsApp. Online

survey distribution was adopted to access to participants across different states which are not

easily accessible by traditional survey methods such as paper-and-pen questionnaire (Lefever, Dal, & Matthíasdóttir, 2007; Shaughnessy et al., 2012). Informed consent was enclosed to the survey to ensure voluntarism in the participation of respondents, with assured confidentiality, anonymity and with no risks were involved. Additionally, respondents were free to withdraw at any time without any negative consequences, given there is any discomfort that arises during the survey participation and an email address was attached for further inquiries. Upon completion of actual data collection, data entry, analysis and interpretation were conducted. All collected data were encrypted with password, accessed by researchers and supervisors only.

Table 3.1

Table of valid data, disqualified and withdrawn participants

Participants	Frequency
Withdrawn / Refused	10
Disqualified	13
Valid	216
Total	239

Statistical Analyses

Data of age, sex, relationship status, occupation, race, education level, gaming frequency (per week), average gaming duration (per day), gaming experiences (in years), starting age of playing Internet games, average monthly expenses on Internet games (RM), and whether their family members play Internet games were collected as descriptive statistics. Data collected were analyzed using SPSS version 23. Normality indicators such as Skewness, Kurtosis, Histogram, P-plot, Kolmogorov-Smirnov Test were carried out to test the normality of the data. Normality assumption is crucial to be satisfied to reduce the probability of Type I and Type II errors when making inferential statistics which increases the accuracy of results (Mordkoff, 2016). Besides that, it is also vital to produce normal distribution of data to imply that the underlying

variables are continuous and fit one of the assumptions of multiple regression analysis (McEvoy, 2018).

Univariate outliers. The box plot is a graphical display constructed by drawing a box between the upper and lower quartiles with a solid line (whiskers) drawn across the box to locate the median. Both whiskers range 1.5 times of lower quartile and upper quartile. Data located beyond the whiskers on either sides are considered univariate outliers (Field, 2009).

Multivariate outliers. In some cases, the result may be strongly influenced by a data point that differs significantly from other observations. Indices such as Mahalanobis' distance, Cook's distance and Leverage's value are used in detecting those specific cases (Newton & Rudestam, 1999; Williams, Grajales, & Kurkiewicz, 2013). According to Barnett and Lewis (1978), for data set more than 500 cases with four predictors associated p-value of .05, Mahalanobis' value of 23.06 is used as the cutoff point in removing influential cases (see Appendix E, p.95). Following this, in Cook's distance, cases scored higher than the value of 1 are considered outliers (Cook & Weisberg, 1982). Furthermore, leverage value is $(k+1)/n$, provided k is the number of independent variable and n is the number of participants (Field, 2009). Leverage's value of 0 to 1 was also used as the indicator to examine influential cases (Mohammadi, 2016). Any case that violated two over three of the indicators (e.g.: Mahalanobis' distance, Cook's distance and Leverage's value) will be considered removed from the final data.

Histogram. Histogram refers to a visual presentation of the data's frequency distribution with observed values plotted against the frequency (Das & Imon, 2016). Distribution displayed in a symmetric bell-shaped curve is considered to be normally distributed (McEvoy, 2018).

Quantile-quantile (Q-Q) Plots. Quantile-quantile (Q-Q) plot differentiates the quantiles of a data distribution with the quantiles of a standardized theoretical distribution (Das & Imon,

2016). A normally distributed Q-Q plot plots closely to the straight line, hence, the further the distribution plotted away from the straight line, the more suspected outliers leading to a skewed distribution (Wilk & Ghanadesikan, 1968).

Skewness and Kurtosis tests. Skewness and Kurtosis tests are numerical method used to measure normality. Skewness measures the asymmetry of a probability distribution with real-valued random variable about its mean (Pearson, 1895), meanwhile kurtosis distinguishes the data between heavy-tailed or light-tailed that is relative to a normal distribution. An acceptable range of ± 2 is applied for skewness and kurtosis (Field, 2009; George & Mallery, 2010; Trochim & Donnelly, 2006), indicating a normal distribution of data.

Kolmogorov-Smirnov test (K-S test). Kolmogorov-Smirnov test is designed to test normality by comparing your data to a normal distribution with the same mean and standard deviation of your sample given that p-value of .05 in this study. Simply put, a value greater than .05, signifying the sample distribution is not significantly different from a normal distribution (Mendes & Pala, 2003).

Multiple Regression analysis was further conducted to determine the predictive effects of the motive of achievement, motive of social, motive of immersion and social phobia on the symptoms of IGD. Several assumptions were required to be satisfied for multiple linear regression analysis, such as linearity, homoscedasticity, independent error, multivariate outliers, normality of residual, and continuous variables.

Variable type. Independent variable must be quantitative or categorical and dependent variable must be continuous (Field, 2009). By quantitative, it signifies that the variables should be at interval level (Field, 2009). By continuous, it implies the variable adopts any numerical value between two specified values (Field, 2009).

Homoscedasticity. Homoscedasticity refers to the situation where residuals have the same variance across each level of the predictors. When the variance of residuals differs at different values of the predictors, heteroscedasticity is detected (Osborne & Waters, 2002). The assumption is violated when the residuals are not evenly scattered around the line (Osborne & Waters, 2002).

Linearity of residuals. Linearity of residuals refers to the condition of linear distribution of relationship between the independent variable and the dependent variable (Osborne & Waters, 2002). Linearity can be observed by a visual examination of scatter plot where residuals plotted against Y-axis (Osborne & Waters, 2002).

Normality of residuals. Normality of residuals refers to the condition where the residuals are normally distributed (Field, 2009). This condition could be examined by checking the distribution of residuals on scatter plot (Field, 2009)

Multicollinearity. Multicollinearity occurs when the predictors are highly correlated with each other (Hair, Black, Babin, & Anderson, 2013). However, in multiple regression analysis, it aims to have low inter-correlations between predictors (Hair et al., 2013). Multicollinearity is examined through variance inflation factor (VIF) and tolerance (Hair et al., 2013). A value of VIF higher than 10 and tolerance lower than .10 indicates potential problem of multicollinearity (Hair et al., 2013).

Independent errors. The residuals should be independent or uncorrelated (Field, 2009). Durbin-Watson indicator is used to estimate the residuals in linear regression (McAuliffe, 2014). A value closer to 2 indicates that the residuals are not correlated and independent (McAuliffe, 2014). Field (2009) suggests that values under 1 or more than 3 are a definite cause for concern.

Chapter IV

Results

Actual study

1,075 participants were collected; however, 39 cases have been removed after filtering

the 14 cases of univariate outliers, 25 incomplete responses as well as the non-fulfillment of the

inclusion criteria, with a total of 1,036 remaining respondents for final analyses. The background

of respondents has also been analyzed for a better understanding of the distribution in each

category (refer to Table 4.1).

Table 4.1

Demographic Information of Respondents with Frequency (N=1036)

Variable	n	%	Mean	SD
Age			21.96	2.36
Sex				
Male	779	75.2		
Female	257	24.8		
Relationship Status				
Single	774	74.7		
Married	22	2.1		
In a relationship	236	22.8		
Separated/ Divorced	4	0.4		
Employment Status				
Employed	242	23.4		
Unemployed	113	10.9		
Others (e.g., student)	681	65.7		
Race				
Malay	352	34.0		
Chinese	467	45.1		
Indian	163	15.7		
Others	54	5.2		
Educational Level				
Pre-U	234	22.6		
Diploma	186	18.0		
Bachelor's degree	584	56.4		
Postgraduate degree	32	3.1		
Gaming Frequency (per week)				
0-1 time	104	10.1		
2-4 times	290	28.8		
5-8 times	276	26.6		
9 times and above	366	35.3		

Table 4.1 (Continued)

Demographic Information of Respondents with Frequency (N=1036)

Variable	n	%	Mean	S.D
Average Gaming Duration (per day)				
1 hour and below	174	16.8		
2-4 hours	637	61.5		
5-7 hours	189	18.2		
8-11hours	029	2.8		
11 hours and above	7	0.7		
Gaming Experience (in years)				
1 year	112	10.8		
2-4 years	328	31.7		
5-7 years	240	23.2		
8-10 years	174	16.8		
11 years and above	182	17.6		
Starting Age			14.58	3.96
Average Monthly Spend on Internet Games (RM)				
0-100	853	82.3		
100-200	97	9.4		
201-300	45	4.3		
301-400	19	1.8		
401-500	22	2.1		
Family Member(s) who play Internet Games				
Yes	714	68.9		
No	322	31.1		
Internet Gaming Disorder			21.16	6.15
Low ($\leq$ 21.16)	580	55.98		
High (>21.16)	456	44.02		
Social Phobia			7.51	5.91
Low ($\leq$ 7.51)	577	55.69		
High (>7.51)	459	44.31		
Motivation of Achievement			45.56	9.76
Low ($\leq$ 45.56)	508	49.03		
High (>45.56)	528	50.97		
Motivation of Social			34.35	6.98
Low ($\leq$ 34.35)	525	50.68		
High (>34.35)	511	49.32		
Motivation of Immersion			40.38	9.56
Low ($\leq$ 40.38)	506	48.84		
High (>40.38)	530	51.16		
Total	1036	100.00		

Note. S.D = Standard Deviation

A majority of respondents in this present study comprised of 75.2% of males and 45.1%

of Chinese with a mean age of 21.96. 74.7% of the respondents were single and 65.7% were still

studying with most cited Bachelor's degree as their highest educational qualification. 31.7 % of

them have been playing for 2 to 4 years with 35.3% up to 9 times and above per week and 61.5%

played for 2 to 4 hours in a day. 82.3% of the respondents spent an average monthly spend on

Internet Games of within RM100.

Outliers Detection

Univariate outliers. 14 influential cases were removed. B226, B353, P169, P171, S38,

S60, S94, S97, S124, S147, S184, D2, D73 and D166 were found located outside the whiskers of

boxplot (see to Appendix F, p.96)

Multivariate outliers. Casewise diagnosis showed 41 cases of potential outliers, which

were B33, B73, B89, B102, B114, B126, B146, B192, B198, B284, B286, B315, B326, P2,P7,

P8, P38, P40, P52, P68, P115, P180, P183, J17, J92, J95, J128, S53, S80, S139, S157, S160,

S185, D3, D93, D99, D113,D136, D137, D190, D199 (see to Appendix I, p.105). Based on the

benchmark proposed by Barnett and Lewis (1978), no cases should exceeded Mahalanobis'

value of 23.06 (see Appendix E, p.95). No cases were found to have cook's distance statistic

higher than the cutoff point of 1 (Cook & Weisberg, 1982). Moreover, no cases have exceeded

Leverage value which was reported as 0 to 1. 270 cases were found exceeded the Leverage value

of 0.0048 calculated. However, given that the case violated two over three of the indicators (e.g.:

Mahalanobis' distance, Cook's distance and Leverage value) will only be considered removed

from final data, therefore there was no influential cases removed.

 Assumption of Normality

Histogram. Histograms of Internet gaming disorder, motivation of achievement, the

motivation of social, motivation of immersion showed symmetrical, indicating normal

distribution of data for these variables. Nevertheless, the histogram for social phobia exhibited a

positively skewed distribution with mode scored at zero (see Appendix G, p.99).

Quantile-quantile (Q-Q) plots. The points of Q-Q plots for each variable lie on a

straight diagonal line. Additionally, the deviations from the straight line are minimal, indicated

the normal distribution of data. (see Appendix H, p.102)

Skewness and Kurtosis tests. Skewness and kurtosis tests achieved desirable benchmark

with the indices of skewness and kurtosis fall between the acceptable range of ± 2 (George &

Mallery, 2010; Field, 2009; Trochim & Donnelly, 2006) which further confirmed the assumption

of normal distribution (refer to Table 4.2).

Table 4.2

Skewness and Kurtosis Table

Variable	Skewness	Kurtosis
Internet Gaming Disorder	.313	-.446
Social Phobia	.564	-.523
Motivation of Achievement	-.256	.171
Motivation of Social	-.107	-.275
Motivation of Immersion	-.025	-.433

Kolmogorov-Smirnov Test. Assumption of normality was violated as motivation of

achievement, motivation of social, and motivation of immersion reported a test value smaller

than .05, indicated the sample distribution of these three variables were potentially different from

the normal distribution (Mendes & Pala, 2003)(refer to Table 4.3).

Table 4.3

Kolmogorov-Smirov Test table

Variable	Statistic	df	Sig.
Internet Gaming Disorder	.071	1036	.000
Social Phobia	.102	1036	.000
Motivation of Achievement	.043	1036	.000
Motivation of Social	.044	1036	.000
Motivation of Immersion	.039	1036	.000

Linearity of residual, Normality of residual and Homoscedasticity. Assumptions of

linearity of residuals, normality of residuals and homoscedasticity were satisfied as the residuals

scattered around zero, as shown in the scatter plot, where the points were closely resemble a

straight line (Field, 2009; Osborne & Waters, 2002)(refer to Figure 4.1).
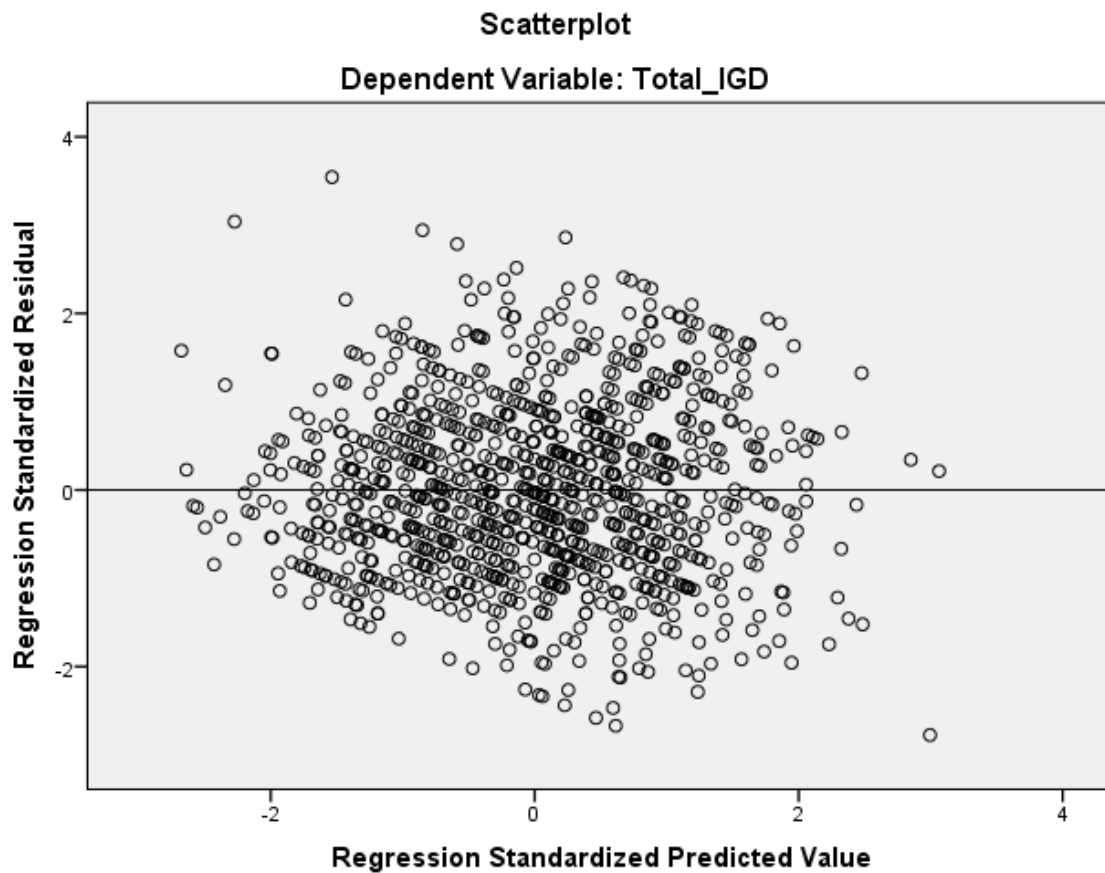
Figure 4.1: Linearity of residuals, Normality of residuals, and homoscedasticity among variables

Multiple Linear Regression Assumptions

Multicollinearity. Variables of social phobia, motivation of achievement, motivation of social, and motivation of immersion were not correlated. Assumption of multicollinearity was not violated with each variable reported a tolerance statistic higher than .10 and VIF value lower than 10 respectively (Hair et al., 2013) (refer to Table 4.4).

Table 4.4

Collinearity Statistic Table

Independent Variable	Tolerance	VIF
Social Phobia	.962	1.039
Motivation of Achievement	.435	2.298
Motivation of Social	.500	2.000
Motivation of Immersion	.465	2.152

Independent errors. Low inter-correlations was reported with Durbin-Watson statistic of 2.055. As suggested by McAuliffe (2014) that closer to benchmark of 2 indicated uncorrelated errors, meanwhile proposed by Field (2009) indicated that values under 1 or more than 3 are a definite cause for concern, thus value of 2.055 which closer to 2 and fall 1 to 3 shown no cause of concern for correlated errors.

In summary, the assumptions of continuous variables, linearity, normality of residuals, homoscedasticity, multivariate outliers, and independent errors are met in the present study. In addition, multicollinearity was not found with any violations.

Inferential Analyses

Multiple linear regression was conducted to test if motivation of achievement, motivation of social, motivation of immersion and social phobia significantly predict Internet gaming disorder symptoms. The model was statistically significant $F (4,1031) = 93.298$, $p < .001$, and

accounted for 26.3% of variance (refer to Table 4.8). The results found that motivation of

achievement (β = .193, p < .001), motivation of social (β = -.156, p < .001), motivation of

immersion (β = .372, p < .001) and social phobia (β = .233, p < .001) significantly predict

Internet gaming disorder symptoms (refer to Table 4.8). Meanwhile, motivation of immersion

was found to be the strongest predictor, followed by social phobia, motivation of achievement

and motivation of social. Result shown has indicated that H1, H3 and H4 were supported while

H2 was not supported (refer to Table 4.8).

Table 4.5

ANOVA Table of Multiple Linear Regression (Social Phobia, Motivation of Achievement,
Motivation of Social, Motivation of Immersion and Internet Gaming Disorder)

Model		Sum of Squares	Mean Square	Sig
1	Regression	10406.697	2601.674	.000
	Residual	28749.971	27.886	
	Total	39156.668		

Table 4.6

Model Summary of Multiple Linear Regression (Social Phobia, Motivation of Achievement,
Motivation of Social, Motivation of Immersion and Internet Gaming Disorder)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516	.266	.263	5.28

Table 4.7

Coefficients Table of Multiple Linear Regression (Social Phobia, Motivation of Achievement,
Motivation of Social, Motivation of Immersion and Internet Gaming Disorder)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std.Error	Beta	t	Sig.
1	(Constant)	8.857	.911		9.719	.000
	Social Phobia	.243	.028	.263	8.570	.000
	Motivation of Achievement	.122	.025	.193	4.778	.000
	Motivation of Social	-.138	.033	-.156	-4.144	.000
	Motivation of Immersion	.239	.025	.372	9.501	.000

Table 4.8

Table of Result Summary

Hypotheses	Standardized Beta-β	*p*-value	Decision
H1: Motivation of achievement predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.	.193	.001	Supported
H2: Motivation of social predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.	-.156	.001	Not supported
H3: Motivation of immersion predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.	.372	.001	Supported
H4: Social phobia predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.	.233	.001	Supported

Chapter V

Discussion and Conclusion

H1: Motivation of achievement predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.

The motivation of achievement positively predicted IGD symptoms significantly as hypothesized. Consistent with previous findings, striving for achievement was found to be the positive contributor that lead to IGD symptoms (Beard & Wickham, 2016; Dauriat et al., 2011; Johnson, Nacke, & Wyeth, 2015; Kahn et al., 2015).

Motivation of achievement is closely tied with the needs of competence and autonomy based on Self-Determination Theory (SDT), which was proposed by Deci and Ryan (2000). Bartle (2014) noted that gaming activity is usually voluntary except under experimental context. Gamers voluntary seek for games that suit their personal interest, given that activities conducted out of personal enthusiasm comes with high perceived autonomy (Ryan, Rigby & Przybylski, 2006). Gamers experience a sense of control and fulfillment in the need of competence by securing objectives, killing enemy heroes, and conquering the opposing team (Johnson et al., 2015). This transfer of in-game successes then enhances their self-esteem (Snodgrass et al., 2013).

Online gaming also serves as a platform for gamers to seek for achievement and self-identification by playing with others who shared the same interest to enhance their self-image (Ko et al., 2005). People exploited gaming in obtaining temporary sense of certainty and control that lacking in their life by feeling identical with avatar employed in terms of strength, vitality, social status and adventurousness (Šporčić & Glavak-Tkalić, 2018). Consequently, the desire to obtain greater accomplishment and recognition strive them to spend increased amount of time in

gaming to feel confidence, self-assurance, and enhance their self-concept. The fulfillment of autonomy and competence needs brings gamers satisfaction and further drive them to continuous of play, and in turn lead to addiction. .

H2: Motivation of social positively predicts IGD symptoms among Malaysian MOBA players.

The present study's hypothesis was not supported as motivation of social predicted IGD negatively. Although, the present finding was inconsistent with past studies (Beard &Wickham, 2016 ; Dauriat et al., 2011 ; Hussain, Williams, & Griffiths, 2015; Xu et al., 2012), the present finding yielded similar results with a study conducted by Lehenbauer-Baum, Klaps, Kovacovsky, Witzmann, and Zahlbruckner (2015) which only presented motivation of achievement and motivation of immersion as a significant predictor of gaming addiction.

The nature of MOBA provokes more frustration and difficulties with limited autonomy (Johnson et al., 2015) which explains the present finding as such a gaming community fail to provide nourishing and satisfying socializing opportunities. Furthermore, the present result of motivation of achievement as a significant positive predictor of IGD symptoms while motivation of social predicted IGD negatively are in line with a study conducted by Johnson et al. (2015), which described a greater emphasis placed on competition and a sense of achievement over motivation of socializing among MOBA gamers. Additionally, the proportion of male samples was pointedly higher than female samples in the present study, which are evident with the explanation that male gamers are more prone to pursuing a sense of achievement while female gamers are more driven by social relationships (Ko et al., 2005; Williams, Consalvo, Caplan, & Yee, 2009). Consequently, motivation of social was not fulfilled in the present study.

In conclusion, it is suggested that motivation of social predicted IGD symptoms negatively, indicating that motivation of social increases while IGD symptoms decreases.

H3: Motivation of Immersion predicts Internet gaming disorder symptoms positively among Malaysian MOBA players.

Further, motivation of immersion was found to be the strongest predictor that positively predicted IGD symptoms. As hypothesized, motivation of immersion reported as a significant positive contributor to IGD symptoms and this result was in line with previous findings (Hellström et al., 2012; Kneer & Glock, 2013; Kuss et al., 2012; Zhong & Yao, 2013).

Current findings can be explained with immersion serves as an escape or avoidance for gamers to self-regulate one's negative emotions and stress related to the physical world, others and self (King & Delfabbro, 2014; Lee & Shin, 2004). Gamers' thoughts are preoccupied temporarily with games given that playing immensely is associated with absence of realization of time and real world, provide gamers a favorable experiences (Jennett, et al., 2008) and positive emotions involvement as gaming requires full concentration (Johnson et al., 2015).Besides that, gamers indulge in gaming to avoid their responsibilities (Zhong & Yao, 2013), thus placing their job and relationship at risk. Simply put, gameplay is used as a channel to escape from negative emotions and gain positive affect in the virtual world. This consequently formed a reinforcement mechanism that further strengthen their association to gaming in the face of stressful and anxiety in real-life situations.

As a result of their self-esteem needs are unmet in the physical world, gamers tend to adopt gaming as coping strategy or compensation to experience confident and boost their self-esteem. Kuss and Griffiths (2012) had also noted that individuals who frequently adopt gaming as a coping skills when facing stress may be at risk for failing to develop constructive and

healthy coping strategies in the future, shaping a negative cycle. Studies have also supported that people with low self-esteem, low life satisfaction (Ko, Yen, Chen, Chen, & Yen, 2005), and low social competence (Lemmens, Valkenburg, & Peter, 2011) are more likely addicted to online games. Taken together, IGD symptoms are more likely to develop given that gamers rely on gaming as their maladaptive coping strategies to evade when facing stressful events in life.

H4: Social phobia positively predicts IGD symptoms among Malaysian MOBA players.

The present study exhibited social phobia as a significant positive predictor of IGD symptoms. The finding displayed significant positive prediction from social phobia on IGD symptoms were in line with past studies (Gentile et al., 2011; Sioni et al., 2017 ; Wei et al., 2012), suggesting that social phobia significantly predicts problematic online gaming behaviour.

The present finding can be attributed to the satisfaction gained from virtual gaming interactions as socially phobic individuals are incapacitated in satisfying their innate psychological needs for interpersonal connection and social approval in the real world (Baumeister and Leary, 1995; Moore & Johnson, 2009; Billieux et al., 2013). As posited by Wei et al. (2012), they indulge in the virtual world to avoid face-to-face interaction. As a result, they enmesh themselves in virtual social interaction which replicates social reality aspects, but in a controllable amount and depth (Lee & Stapinski, 2012) to experience a sense of belongingness which is absent to them in the real world (Grinberg et al., 2014).

Moreover, socially phobic individuals possessed greater concern towards what other people would evaluate or judge them when having face-to-face interaction, however, the virtual world created an environment with lesser public self-awareness (Chou, 2001). Thus, the function of role-playing on online gaming serves as a compensatory role to fulfil their unsatisfied aspect of need for human connection in real life (Wan & Chiou, 2006). King and Delfabbro (2014) have

also further indicated that online gaming interaction is employed as a method to develop self-esteem and gain social acceptance. These results were pertinent to two IGD criteria: experience of withdrawal symptoms when not engaged in gaming as well as sacrifice of important relationships as the outcome of playing (APA, 2013), signifying that virtual social interaction allowed players to satisfy their need for interpersonal relationship while simultaneously detaching them from real-life communication (King & Delfabbro, 2014). Additionally, empirical studies were also evident in discovering a greater difficulty in real-life socializing since they started gaming (Achab et al., 2011; Smyth, 2007). In summary, it is postulated that socially phobic individuals find solace and fulfil psychological needs from online communication which exacerbated IGD symptoms.

Theoretical Implications

The present study employed SDT in understanding the prediction of motivations of gaming and social phobia to IGD symptoms. In spite of the discrepancies found in previous findings, the results of the current study provided evidence to support SDT in relation to the conceptualization of IGD. Motivation of achievement, motivation of immersion and social phobia are found to be positive predictors of IGD symptoms which are in line with previous studies (Johnson et al., 2015; Kneer & Glock, 2013; Sioni et al., 2017). Gamers' needs of competence, autonomy, and relatedness are satisfied through gaming which exacerbate IGD symptoms. Gamers feel gaining control, mastery of tasks and learn new skills, perceive gaming as channel for escape when facing stress, which drives them in frequent gaming activities. Similarly, gamers perceive gaming as another alternative for relatedness needs that enable themselves to from stressful social occasions. Hence, SDT is suggested as a conceptually relevant theory in understanding the association between the motivation of achievement,

motivation of immersion and social phobia in different cultural context.

However, motivation of social reported as negative predictor of IGD symptoms which was inconsistent with past findings (Beard & Wickham, 2016; Dauriat et al., 2011; Hussain, Williams, & Griffiths, 2015; Xu, Turel, & Yuan, 2012). The inconsistency may present an insight to future researchers in explaining the difference and contribute to the development of the theory. Furthermore, in regard to the warranting condition for more empirical studies in conceptualizing Internet gaming disorder in DSM-IV, this study attempts to contribute as supporting literature in conceptualizing the IGD criteria among MOBA gamers. This study also serves as an initial step in understanding the MOBA gaming trend in Malaysia context, as most of the researches were conducted in western context.

Practical Implications

The finding of the current study contributed a deeper understanding on the prediction of the motivations of gaming and social phobia to IGD symptoms. It paves the way for mental health professionals to identify individuals at risk and serves as a guideline in designing interventions and therapy with more comprehensive information related to IGD symptoms. Given that the finding exhibited individuals at risk of IGD symptoms are highly driven by motivation of immersion and social phobia, mental health practitioners can create support groups for gamers with IGD symptoms to provide social support and assistance for gamers to learn healthy coping strategies and social skills. It has also shed light on raising Malaysian's awareness and gaining greater recognition of IGD in the Ministry of Youth and Sports. In relation to this, the present study has documented the average starting age of 14.58 among MOBA gamers, the Ministry of Youth and Sports can be more cautious of the earlier onset of IGD to the younger

population. Thus, psychoeducation and prevention campaigns can be carried out to raise awareness in accordance to this population.

In line with the results that noted motivation of achievement, the motivation of immersion and social phobia acts as the significant positive predictors, parents are encouraged to pay more attention to their kids' self-esteem and self-concept development that strengthen their confidence when socializing among peers. In addition, future research is also recommended to focus on gamers' motive of using gaming as a tool for socializing in relation to IGD symptoms, as the finding presented inconsistent results with previous studies, indicating that Malaysian MOBA gamers are less likely to utilize gaming as a tool in socializing.

Limitations

Malaysia Demographics Profile (2018) has recorded a total population of 61.7% of natives, 20.8% of Chinese followed by 6.2% of Indians and 0.9% of others, while the present study comprised of 45.1% of Chinese, 34% of Malays, 15.7% of Indians and 5.2% of others. The results showed disproportionate of racial groups in the present study, particularly in the Chinese samples as evident by 467 out of 1,036 respondents. Apart from that, youths aged below 18 were excluded from the present study due to an increased difficulty in obtaining immediate parental consent for research participation with geographical constraints, nevertheless, studies have discovered that adolescents are more vulnerable to addiction (Balogh et al., 2013; Saunders et al., 2017). As a result, we may not be able to generalize the results of the present study to all Malaysians.

The limitations include using purposive sampling and self-reported online measures. The nature of purposive sampling can be difficult in generalizing the current findings to all

population (Sharma, 2017). Moreover, although self-reported measures are continuously widespread in the diverse fields of empirical studies (Lance & Vandenberg, 2009; Sallis & Saelens, 2000), it has also brought forth several limitations such as the occurrence of social desirability when respondents only depict what is socially desirable as well as over-reporting of behaviours as a consequence of a motivational shift for being involved in the study (Christensen et al., 2014; Sallis & Saelens, 2000). Besides that, there is no control over the completion of questionnaires with a poor recall of important information and lower levels of self-awareness which could also contribute to having low response rate and the inaccuracy of responses reported (Christensen et al., 2014; Phellas, Bloch, & Seale, 2011), and subsequently affect the accuracy of the final results.

Lastly, the use of cross-sectional study in the present study has contributed to one of the limitations. According to APA (2013), IGD is recognized as an addictive behaviour which progresses with persistent and recurrent episodes, while cross-sectional study measures the interested variables at a specific time (Alexander et al., 2015; Christensen et al., 2014). Therefore, the use of cross-sectional study may not be able to address the nature of IGD symptoms.

Recommendations

Future studies are recommended to collect samples with equal number of sex and race to allow the results to be generalized to all population and increase the scope of samples, such as including adolescents since studies have shown that they are more susceptible to additive behaviours (Balogh et al., 2013; Saunders et al., 2017).

Due to the nature of purposive sampling which brings forth of a greater susceptibility of researcher's bias, future studies can be cautious in implementing purposive sampling by constructing conceived criteria based on theoretical framework to reduce the susceptibility of researcher's bias (Sharma, 2017). In light of this, the designation of questionnaires, particularly with sensitive topic should use neutral questions wording to reduce the likelihood of answering based on social desirability (Gosen, 2014). As an illustration, some questions' wording in IGDS9-SF and SPS-6 used included belittling words, such as "deceived", "irritability" and "worry", which could lead to inaccuracy of responses due to social desirability.

Future studies are encouraged to employ aplenty of other research designs on IGD symptoms. To illustrate, longitudinal study may be effective in examining the nature of IGD symptoms because the data are collected more than one point in time and are usually carried out for several years (Christensen et al., 2014). Longitudinal studies help further discover regards to the incidence, timing and chronicity and demonstrate variations over time (Caruana, Roman, Hernández-Sánchez, & Solli, 2015). Besides that, recall bias in responses can also be excluded in longitudinal studies as data will be collected again later during the study (Caruana et al., 2015). Thus, future researches can adopt longitudinal study in examining IGD symptoms and its risk factors, clinical course and whether IGD is an independent disorder are yet to be identified (Gentile et al., 2017).

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Appendix A

Questionnaire

Introduction
This research study is being conducted to examine "The Determinants of Internet Gaming Disorder's Symptoms among Multiplayer Online Battle Arena (MOBA) Gameplayers". Your participation in this survey is highly appreciated.

Procedures
*The questionnaire consists of six sections, which are **Section A, Section B, Section C, Section D**. You are required to complete **ALL** the sections. This survey will take approximately 10 to 15 minutes to complete.*

Potential Risks and Benefits
There are no foreseeable physical or non-physical risks from your participation in this study. There are no direct benefits from taking part in this research. However, your participation will help us get more information and learn more about the relationships between the selected key variables of the study.

Participation
Participation in this study is completely voluntary. If you decide not to participate there will not be any negative consequences. Please be aware that if you decide to participate, you may stop participating at any time.

Confidentiality
Your responses are completely anonymous and all information will be kept in confidential. The information given will only be used for academic purposes.

Contact

If you have any questions, or would like a copy of this consent letter, please contact me at surou369@1utar.my

Please ensure that you have fulfilled the following criteria:
- *Age between 18 and 29 years old*
- *Have experience playing MOBA games (DOTA 2, League of Legends, Mobile Legends etc) at least 12 months period*
- *Is NOT a professional gamer*

Thank you in advance for your participation.

Signature :_____

Email address/contact number :_____

Section A
Please put on [✓] to answer the following questions:

Age	[ ]	
Sex	Male [ ] Female [ ]	
Relationship Status	Single	[ ]
	Married	[ ]
	In relationship	[ ]
	Separated/Divorced	[ ]
Race	Malay	[ ]
	Chinese	[ ]
	Indian	[ ]
	Others: _____	[ ]
Employment status	Employed	[ ]
	Unemployed	[ ]
	Others (e.g., Student)	[ ]
Educational Level	Secondary School/Pre-U	[ ]
	Diploma	[ ]
	Bachelor Degree	[ ]
	Postgraduate Degree	[ ]
Gaming Frequency (per week)	0 – 1 time	[ ]
	2 – 4 times	[ ]
	5 – 8 times	[ ]
	9 times and above	[ ]
Average Gaming Duration (per day)	1 hour and below	[ ]
	2 to 4 hours	[ ]
	5 to 7 hours	[ ]
	8 to 10 hours	[ ]
	11 hours and above	[ ]
Gaming Experience (in years)	1 year	[ ]
	2 to 4 years	[ ]
	5 to 7 years	[ ]
	8 to 10 years	[ ]
	11 years and above	[ ]
Starting Age of Playing Internet Games	[ ]	
Average Monthly Spend on Internet Games(RM)	0 – 100	[ ]
	101 – 200	[ ]
	201 – 300	[ ]
	301 – 400	[ ]

	401 - 500	[ ]
	501 and above	[ ]
Do you have family member(s) play Internet games?	Yes No	[ ] [ ]

Section B

These questions will ask about your gaming activity during the past year:

1 Never   **2 Rarely**   **3 Sometimes**   **4 Often**   **5 Very Often**

1   Do you feel preoccupied with your gaming behaviour?   1 2 3 4 5

(Examples: Do you think about previous gaming activity or anticipate the next gaming session? Do you think gaming has become the dominant activity in your daily life?)

2   Do you feel more irritability, anxiety or even sadness when you try to either   1 2 3 4 5
reduce or stop your gaming activity?

3   Do you feel the need to spend increasing amount of time engaged gaming in   1 2 3 4 5
order to achieve satisfaction or pleasure?

4   Do you systematically fail when trying to control or cease your gaming   1 2 3 4 5
activity?

5   Have you lost interests in previous hobbies and other entertainment activities as   1 2 3 4 5
a result of your engagement with the game?

6   Have you continued your gaming activity despite knowing it was causing   1 2 3 4 5
problems between you and other people?

7   Have you deceived any of your family members, therapists or others because   1 2 3 4 5
the amount of your gaming activity?

8   Do you play in order to temporarily escape or relieve a negative mood (e.g.,   1 2 3 4 5
helplessness, guilt, anxiety)?

9   Have you jeopardised or lost an important relationship, job or an educational or   1 2 3 4 5
career opportunity because of your gaming activity?

Section C

For each question, please circle a number to indicate the degree to which you feel the statement is characteristic or true of you. The rating scale is as follow:

0---------------1---------------2---------------3---------------4
Very untrue of me   **Very true of me**

1 I get nervous that people are staring at me as I walk down the street.   0   1   2   3 4

2 I worry about shaking or trembling when I'm watched by other people.   0   1   2   3 4

3 I would get tense if I had to sit facing other people on a bus or train.   0   1   2   3 4

4 I worry I might do something to attract the attention of other people.   0   1   2   3 4

5 When in an elevator, I am tense if people look at me.   0   1   2   3 4

6 I can feel conspicuous standing in a line.   0   1   2   3 4

*Conspicuous = easily seen, visible, observable.

Section D
The following questions ask about your motivations of online gaming.

1) How interested are you in the precise numbers and percentages underlying the game mechanics? (i.e, chance of dodging an attack, the math comparing dual-wield to two-handed weapons, etc.)

[ ]Not Important At All
[ ]Slightly Important
[ ]Somewhat Important
[ ]Very Important
[ ]Extremely Important

2) How important is it to you that your character is as optimized as possible for their profession / role?
[ ]Not Important At All
[ ]Slightly Important
[ ]Somewhat Important
[ ]Very Important
[ ]Extremely Important

3) How often do you use a character builder or a template to plan out your character's advancement at an early level?
[ ]Never
[ ]Seldom
[ ]Sometimes
[ ]Often
[ ]Always

4) Would you rather be grouped or soloing?
[ ]Much Rather Group
[ ]Rather Group
[ ]In-Between

[ ]Rather Solo
[ ]Much Rather Solo

5) How important is it to you that your character can solo well?
[ ]Not Important At All
[ ]Slightly Important
[ ]Somewhat Important
[ ]Very Important
[ ]Extremely Important

6) How much do you enjoy working with others in a group?
[ ]Not At All
[ ]A Little
[ ]Some
[ ]A Lot
[ ]A Great Deal

7) How important is it to you to be well-known in the game?
[ ]Not Important At All
[ ]Slightly Important
[ ]Somewhat Important
[ ]Very Important
[ ]Extremely Important

8) How much time do you spend customizing your character during character creation?
[ ]Not At All
[ ]A Little
[ ]Some
[ ]A Lot
[ ]A Great Deal

9) How important is it to you that your character's armor / outfit matches in color and style?
[ ]Not Important At All
[ ]Slightly Important
[ ]Somewhat Important
[ ]Very Important
[ ]Extremely Important

10) How important is it to you that your character looks different from other characters?
[ ]Not Important At All
[ ]Slightly Important
[ ]Somewhat Important
[ ]Very Important
[ ]Extremely Important

11) How much do you enjoy exploring the world just for the sake of exploring it?
[ ]Not At All

[ ]A Little
[ ]Some
[ ]A Lot
[ ]A Great Deal

12) How much do you enjoy finding quests, NPCs or locations that most people do not know about?

[ ]Not At All
[ ]A Little
[ ]Some
[ ]A Lot
[ ]A Great Deal

13. How much do you enjoy collecting distinctive objects or clothing that have no functional value in the game?

[ ]Not At All
[ ]A Little
[ ]Some
[ ]A Lot
[ ]A Great Deal

How important are the following things to you in online games?

1) Leveling up your character as fast as possible.
[ ]Important At All
[ ]Slightly Important
[ ]Moderately Important
[ ] Very Important
[ ]Tremendously Important

2) Acquiring rare items that most players will never have.

[ ]Important At All
[ ]Slightly Important
[ ] Moderately Important
[ ]Very Important
[ ]Tremendously Important

3) Becoming powerful.

[ ]Important At All
[ ]Slightly Important
[ ] Moderately Important
[ ]Very Important
[ ]Tremendously Important

4) Accumulating resources, items or money.

[ ]Important At All
[ ]Slightly Important
[ ] Moderately Important
[ ]Very Important
[ ]Tremendously Important

5) Knowing as much about the game mechanics and rules as possible.
[ ]Important At All
[ ]Slightly Important
[ ] Moderately Important
[ ]Very Important
[ ]Tremendously Important

6) Having a self-sufficient character.
[ ]Important At All
[ ]Slightly Important
[ ] Moderately Important
[ ]Very Important
[ ]Tremendously Important

7) Being immersed in a fantasy world.
[ ]Important At All
[ ]Slightly Important
[ ] Moderately Important
[ ]Very Important
[ ]Tremendously Important

8) Escaping from the real world.

[ ]Important At All
[ ]Slightly Important
[ ] Moderately Important
[ ]Very Important
[ ]Tremendously Important

How much do you enjoy doing the following things in online games?

1) Helping other players.
[ ]Not Enjoyable At All
[ ]Slightly Enjoyable
[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

2) Getting to know other players**.**
[ ]Not Enjoyable At All
[ ]Slightly Enjoyable

[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

3) Chatting with other players.
[ ]Not Enjoyable At All
[ ]Slightly Enjoyable
[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

4) Competing with other players.
[ ]Not Enjoyable At All
[ ]Slightly Enjoyable
[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

5) Dominating/killing other players.

[ ]Not Enjoyable At All
[ ]Slightly Enjoyable
[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

6) Exploring every map or zone in the world.
[ ]Not Enjoyable At All
[ ]Slightly Enjoyable
[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

7) Being part of a friendly, casual guild.
[ ]Not Enjoyable At All
[ ]Slightly Enjoyable
[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

8) Being part of a serious, raid/loot-oriented guild**.**
[ ]Not Enjoyable At All
[ ]Slightly Enjoyable
[ ]Moderately Enjoyable
[ ]Very Enjoyable
[ ]Tremendously Enjoyable

9) Trying out new roles and personalities with your characters.
        [ ]Not Enjoyable At All
        [ ]Slightly Enjoyable
        [ ]Moderately Enjoyable
        [ ]Very Enjoyable
        [ ]Tremendously Enjoyable

10) Doing things that annoy other players.
        [ ]Not Enjoyable At All
        [ ]Slightly Enjoyable
        [ ]Moderately Enjoyable
        [ ]Very Enjoyable
        [ ]Tremendously Enjoyable

How often do you do the following things in online games?

1) How often do you find yourself having meaningful conversations with other players?
        [ ]Never
        [ ]Seldom
        [ ]Sometimes
        [ ]Often
        [ ]Always

2) How often do you talk to your online friends about your personal issues?
        [ ]Never
        [ ]Seldom
        [ ]Sometimes
        [ ]Often
        [ ]Always

3) How often have your online friends offered you support when you had a real life problem?
        [ ]Never
        [ ]Seldom
        [ ]Sometimes
        [ ]Often
        [ ]Always

4) How often do you make up stories and histories for your characters?
        [ ]Never
        [ ]Seldom
        [ ]Sometimes
        [ ]Often
        [ ]Always

5) How often do you role-play your character?
        [ ]Never
        [ ]Seldom

[ ]Sometimes
[ ]Often
[ ]Always

6) How often do you play so you can avoid thinking about some of your real-life problems or worries?
[ ]Never
[ ]Seldom
[ ]Sometimes
[ ]Often
[ ]Always

7) How often do you play to relax from the day's work?
[ ]Never
[ ]Seldom
[ ]Sometimes
[ ]Often
[ ]Always

8) How often do you purposefully try to provoke or irritate other players?
[ ]Never
[ ]Seldom
[ ]Sometimes
[ ]Often
[ ]Always

Appendix B

Effect size calculation

Cohen's effect size, $f^2 = \frac{R^2}{1-R^2}$

Motivation of Achievement

$f_1{}^2 = \frac{.097}{1-.097}$

$\quad = 0.1074$

Motivation of Social

$f_2{}^2 = \frac{.067}{1-0.67}$

$\quad = 0.0718$

Motivation of Immersion

$f_3{}^2 = \frac{.019}{1-.019}$

$\quad = 0.0194$

Carlisle, K. L. (2017). *Personality, motivation, and internet gaming disorder: Understanding the*

addiction. Old Dominion University. doi:10.25777/n9br-q768

Social Phobia

$f_4{}^2 = \frac{0.2601}{1-0.2601}$

$\quad = 0.3515$

Sioni, S. R., & Burleson, M. (2017). Internet gaming disorder: Social phobia and identifying

with your virtual self. *Computers in Human Behavior, 71*(1), 11-15.

doi:10.1016/j.chb.2017.01.044

Total Effect Size, f^2

$\frac{0.1074 + 0.0718 + 0.0194 + 0.3515}{4}$

$= 0.14$

Appendix C

Soper's A-priori sample size calculation for Multiple Regression

A-priori Sample Size Calculator for Multiple Regression

This calculator will tell you the minimum required sample size for a multiple regression study, given the desired probability level, the number of predictors in the model, the anticipated effect size, and the desired statistical power level.

Please enter the necessary parameter values, and then click 'Calculate'.

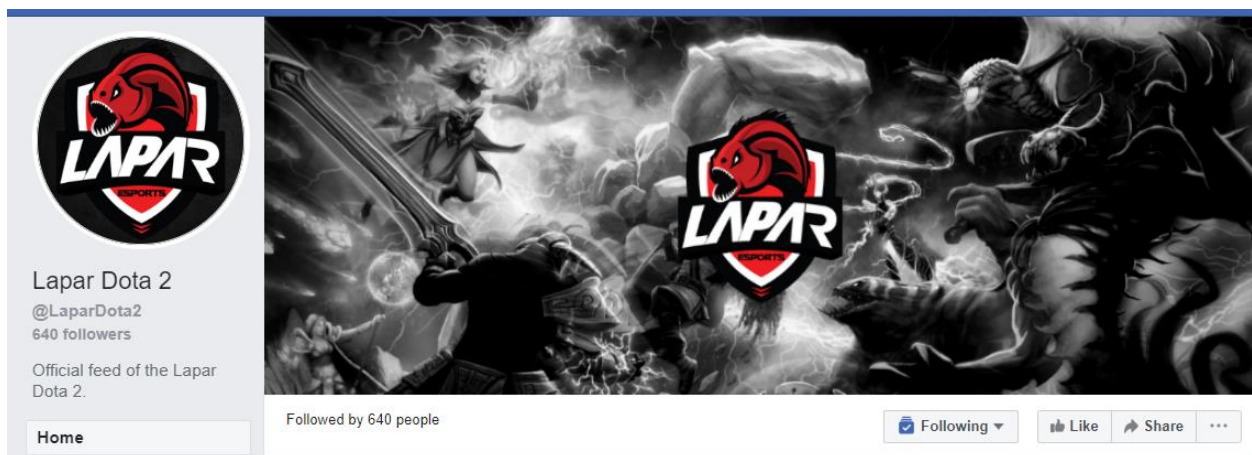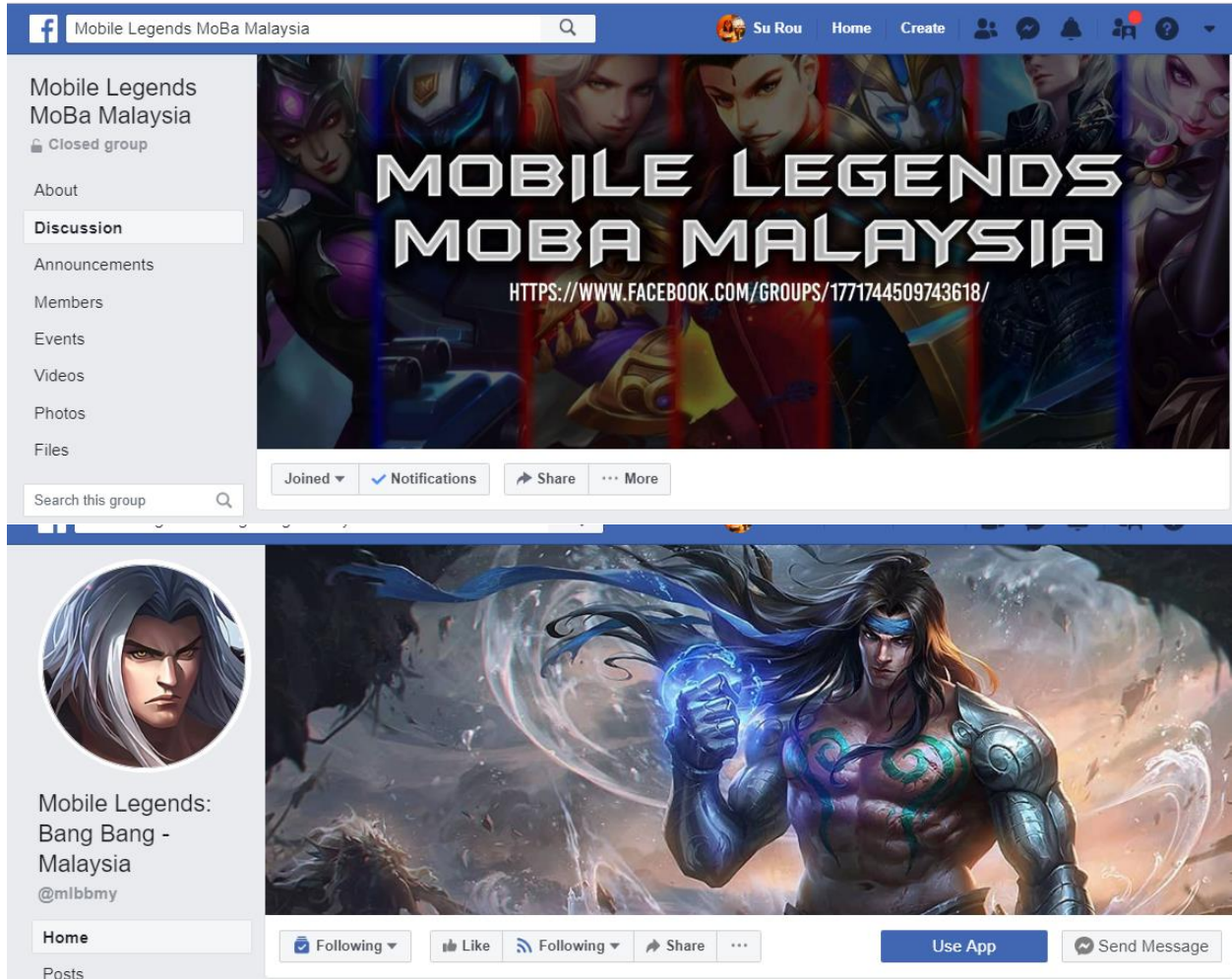|	
Anticipated effect size (f^2):	0.14
Desired statistical power level:	0.95
Number of predictors:	4
Probability level:	0.05

Calculate!

Minimum required sample size: **138**

Activate Windows

Appendix D

Facebook Pages and Groups
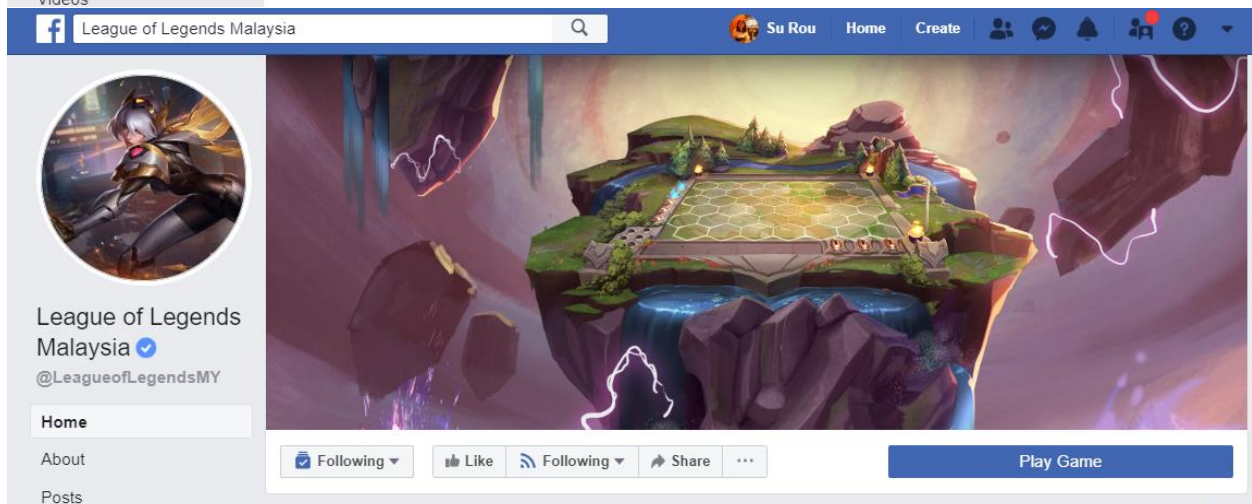
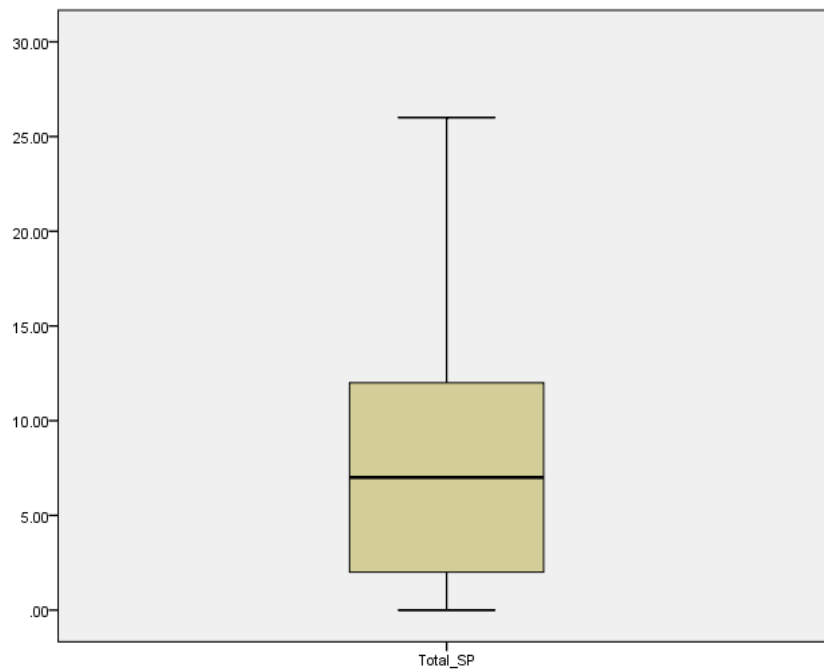**Appendix E**

Table of Mahalanobis value by Barnett and Lewis (1978)

| n	p = 2		p = 3		p = 4		p = 5	
	5%	1%	5%	1%	5%	1%	5%	1%
5	3.17	3.19						
6	4.00	4.11	4.14	4.16				
7	4.71	4.95	5.01	5.10	5.12	5.14		
8	5.32	5.70	5.77	5.97	6.01	6.09	6.11	6.12
9	5.85	6.37	6.43	6.76	6.80	6.97	7.01	7.08
10	6.32	6.97	7.01	7.47	7.50	7.79	7.82	7.98
12	7.10	8.00	7.99	8.70	8.67	9.20	9.19	9.57
14	7.74	8.84	8.78	9.71	9.61	10.37	10.29	10.90
16	8.27	9.54	9.44	10.56	10.39	11.36	11.20	12.02
18	8.73	10.15	10.00	11.28	11.06	12.20	11.96	12.98
20	9.13	10.67	10.49	11.91	11.63	12.93	12.62	13.81
25	9.94	11.73	11.48	13.18	12.78	14.40	13.94	15.47
30	10.58	12.54	12.24	14.14	13.67	15.51	14.95	16.73
35	11.10	13.20	12.85	14.92	14.37	16.40	15.75	17.73
40	11.53	13.74	13.36	15.56	14.96	17.13	16.41	18.55
45	11.90	14.20	13.80	16.10	15.46	17.74	16.97	19.24
50	12.23	14.60	14.18	16.56	15.89	18.27	17.45	19.83
100	14.22	16.95	16.45	19.26	18.43	21.30	20.26	23.17
200	15.99	18.94	18.42	21.47	20.59	23.72	22.59	25.82
500	18.12	21.22	20.75	23.95	23.06	26.37	25.21	28.62

n = number of observations; p = dimension.
Note. From *Outliers in Statistical Data* by V. Barnett and T. Lewis, 1978, New York: Wiley. Copyright 1978 by Wiley. Reprinted by permission of John Wiley & Sons, Ltd.

Appendix F

Boxplots of Internet Gaming Disorder, Social Phobia, Motivation of Achievement, Motivation of
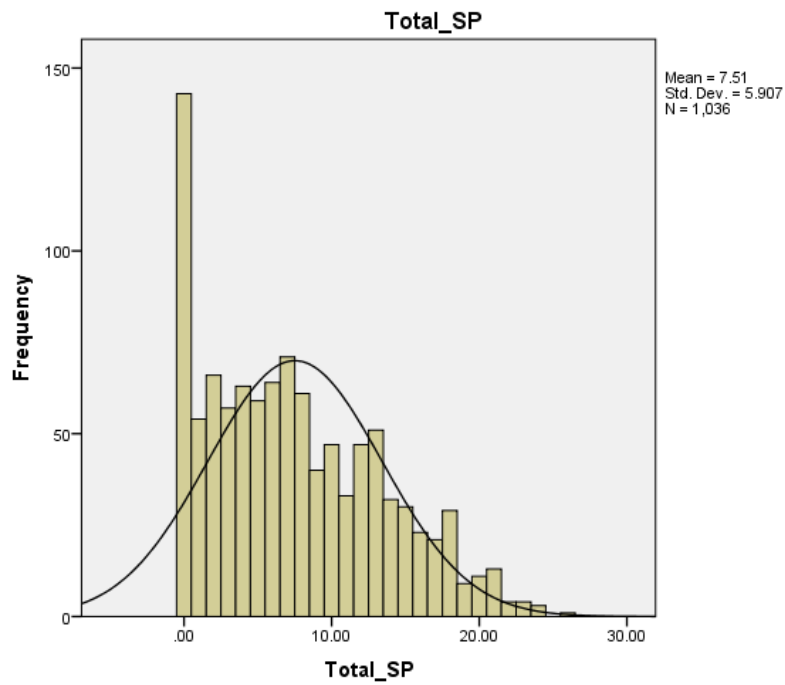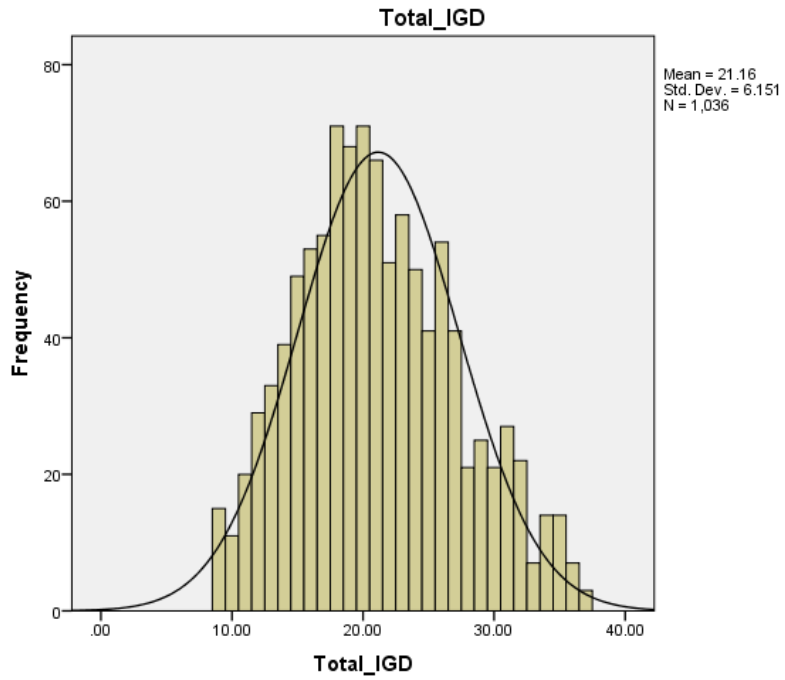
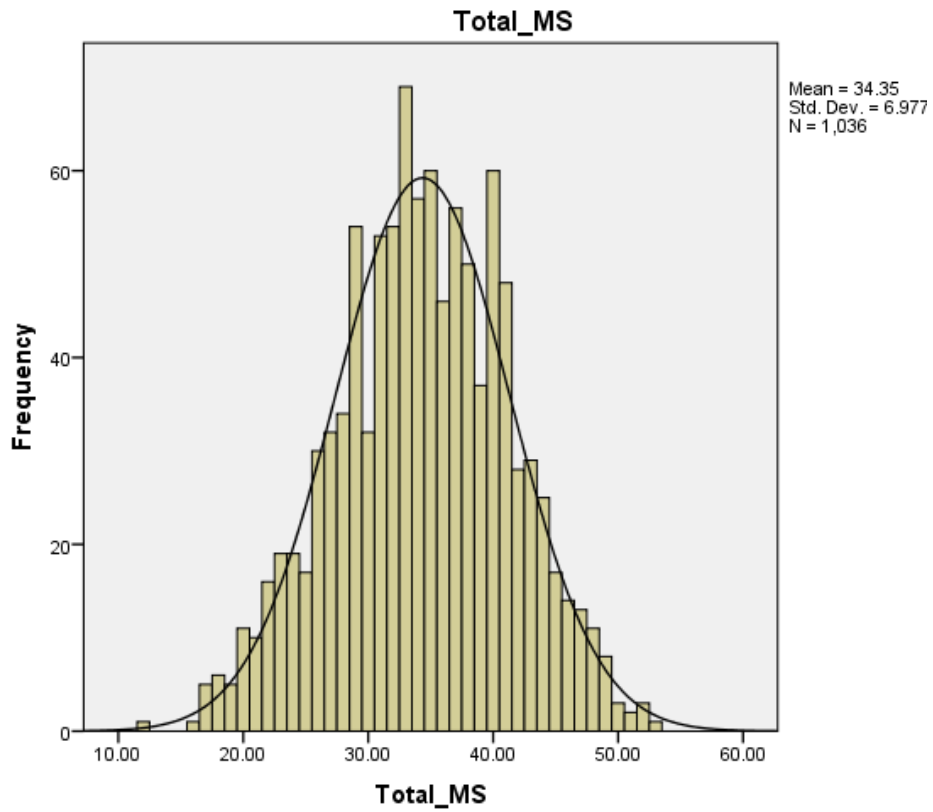Social and Motivation of Immersion

Total_MI
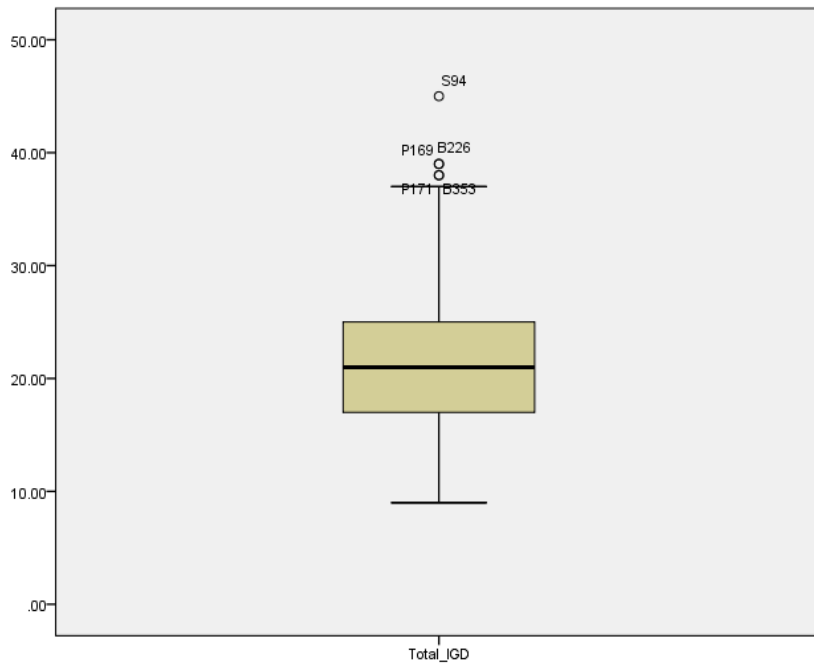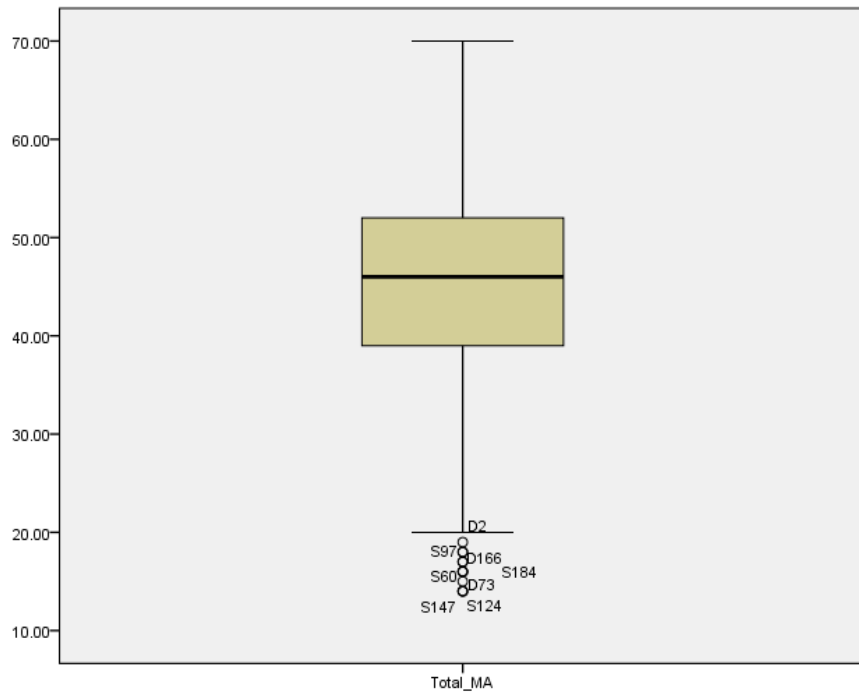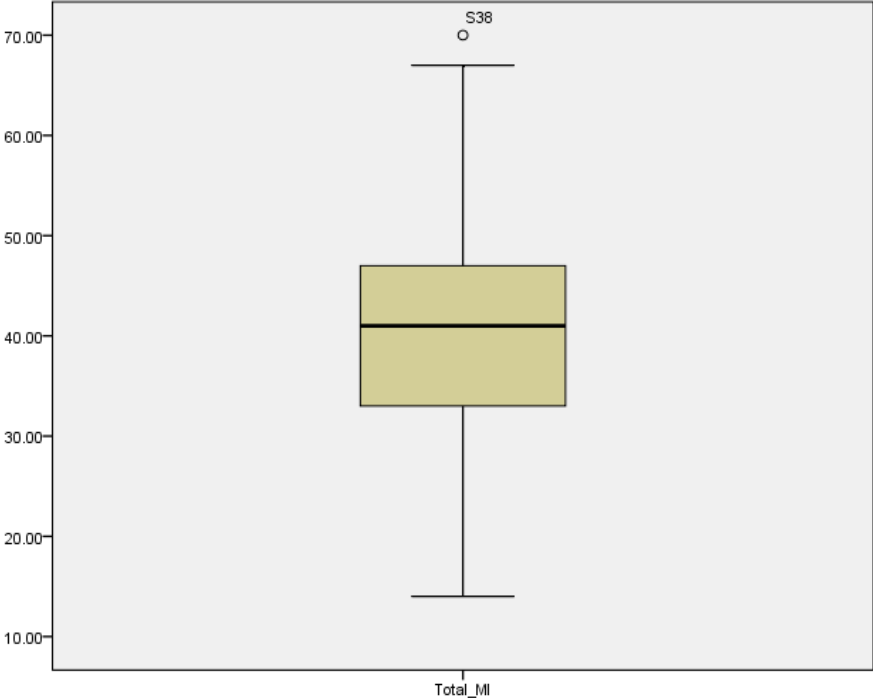
Appendix G

Histograms of Internet Gaming Disorder, Social Phobia, Motivation of Achievement, Motivation of Social and Motivation of Immersion

Total_MA

Mean = 45.56
Std. Dev. = 9.765
N = 1,036

Total_MS

Mean = 34.35
Std. Dev. = 6.977
N = 1,036

Total_MI

Appendix H

Q-Q plots of Internet Gaming Disorder, Social Phobia, Motivation of Achievement, Motivation
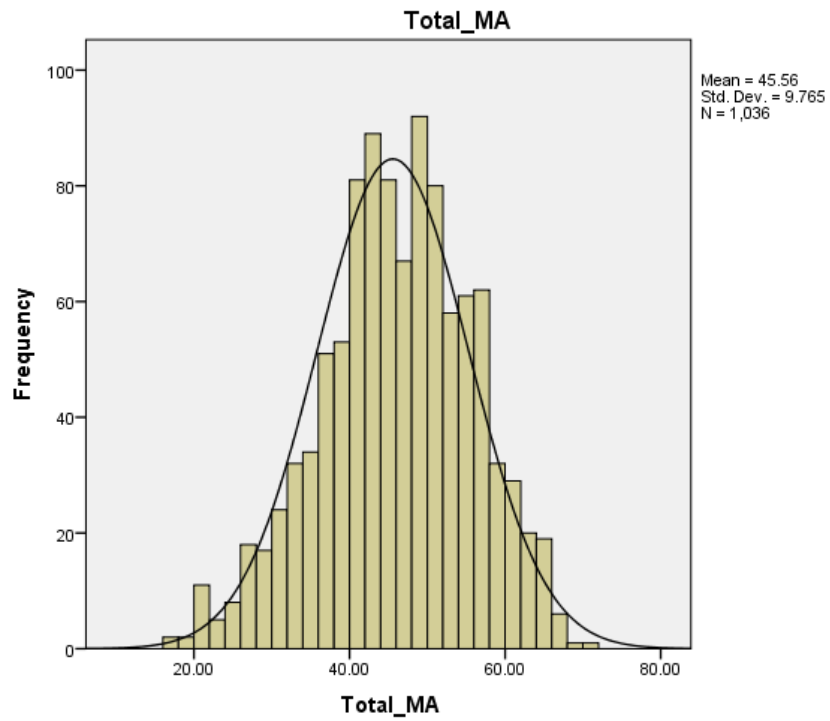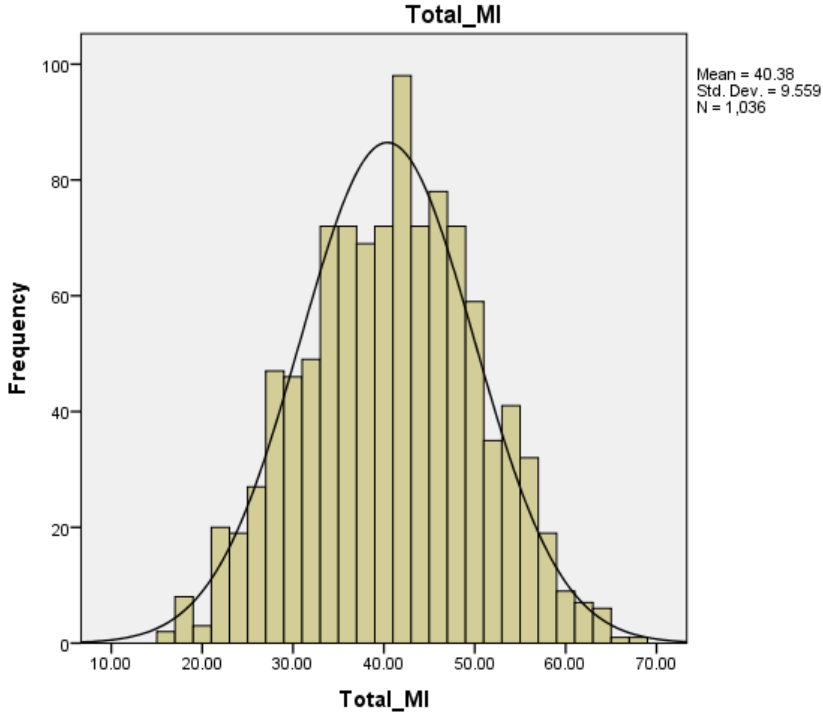
of Social and Motivation of Immersion

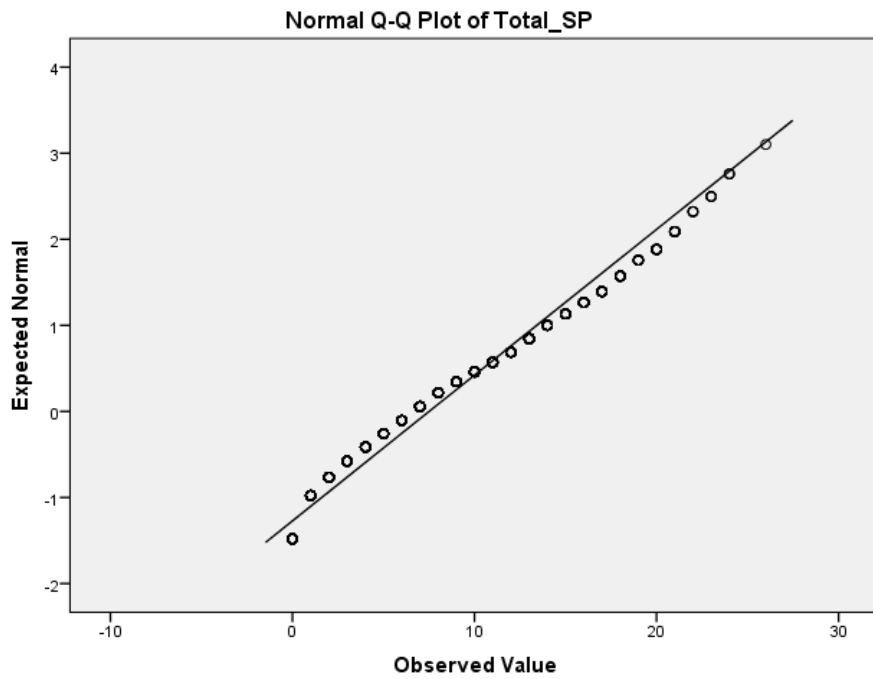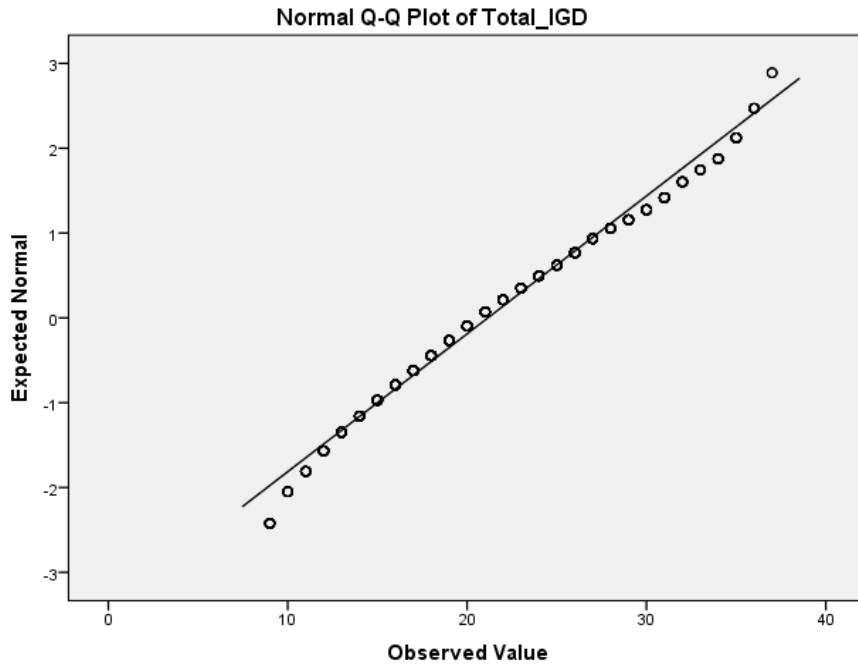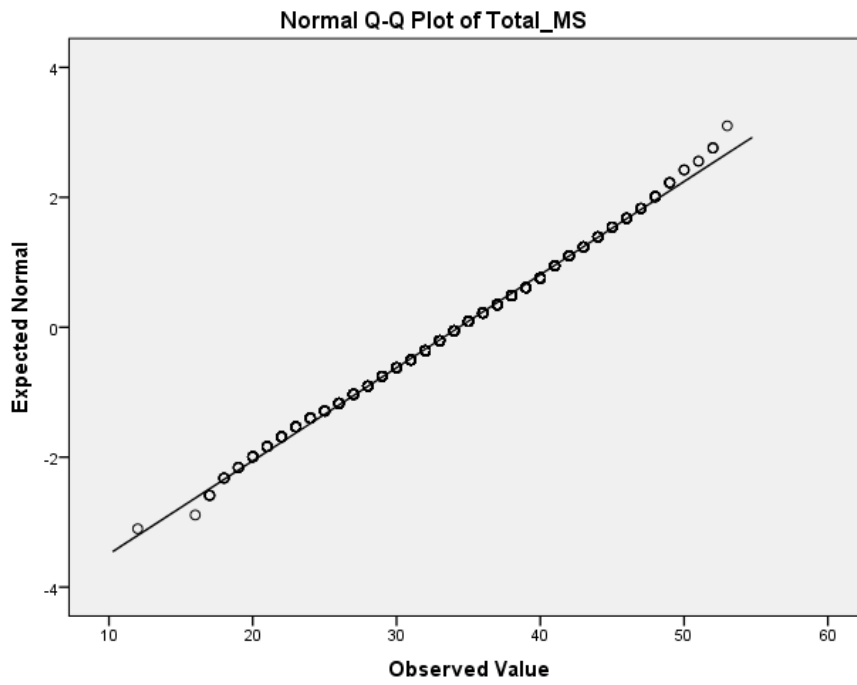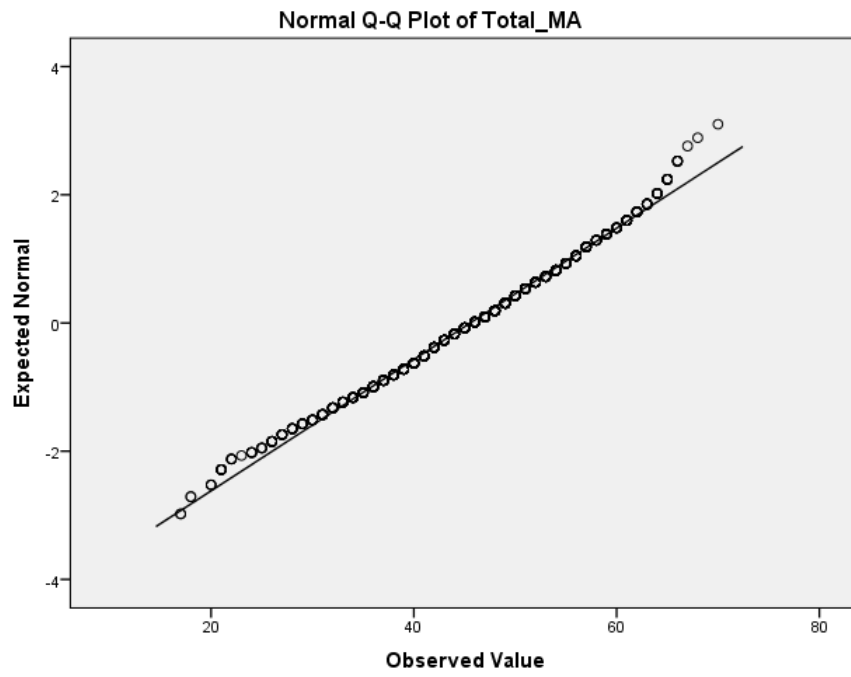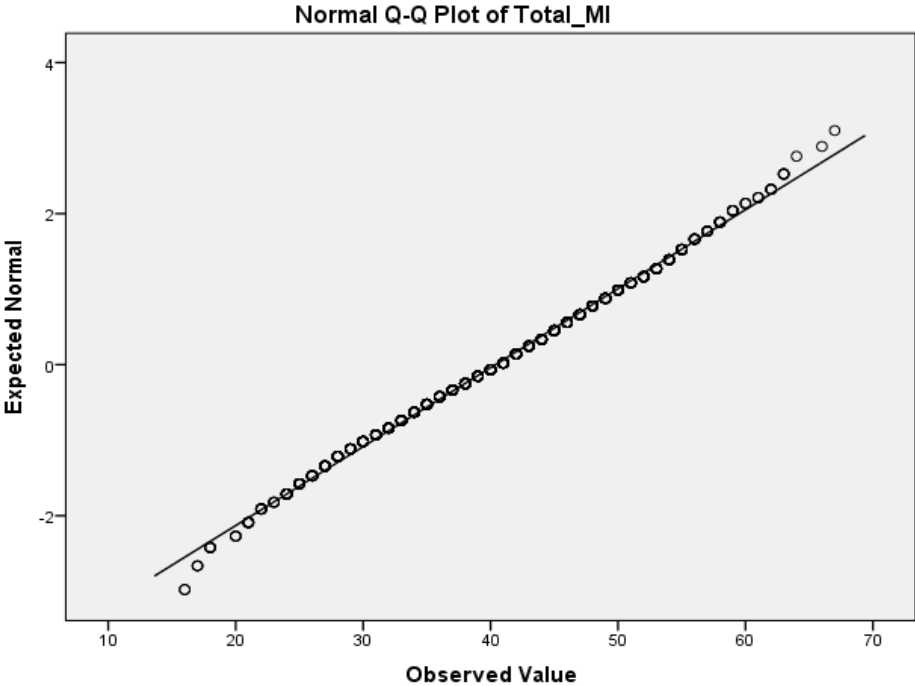Normal Q-Q Plot of Total_IGD

Normal Q-Q Plot of Total_SP

Normal Q-Q Plot of Total_MA

Normal Q-Q Plot of Total_MS

Normal Q-Q Plot of Total_MI

Appendix I

Casewise Diagnostics

Casewise Diagnostics[a]					
Case Number	ID	Std. Residual	Total_IGD	Predicted Value	Residual
31	B33	2.343	36.00	23.6672	12.33284
70	B73	-2.282	10.00	22.0107	-12.0107
85	B89	2.372	36.00	23.5158	12.48422
98	B102	2.366	32.00	19.5456	12.45442
109	B114	-2.593	9.00	22.6496	-13.6496
120	B126	2.272	34.00	22.0416	11.95840
138	B146	2.946	34.00	18.4934	15.50660
169	B192	2.524	34.00	20.7161	13.28394
175	B198	2.393	33.00	20.4032	12.59680
247	B284	2.156	28.00	16.6528	11.34724
249	B286	3.017	30.00	14.1168	15.88320
278	B315	-2.117	12.00	23.1460	-11.1460
284	B326	-2.292	13.00	25.0628	-12.0628
297	P2	2.163	32.00	20.6155	11.38451
301	P7	2.002	34.00	23.4639	10.53611
302	P8	2.178	34.00	22.5371	11.46293
330	P38	-2.664	9.00	23.0260	-14.0260
332	P40	-2.448	9.00	21.8888	-12.8888
344	P52	2.278	36.00	24.0074	11.99261
359	P68	2.895	37.00	21.7597	15.24025
406	P115	-2.153	12.00	23.3350	-11.3350
466	P180	2.103	35.00	23.9275	11.07247
469	P183	2.115	36.00	24.8670	11.13303
500	J17	-2.056	9.00	19.8227	-10.8227
569	J92	2.166	31.00	19.5994	11.40062
572	J95	2.127	33.00	21.8035	11.19647
604	J128	2.287	32.00	19.9590	12.04104
685	S53	3.553	35.00	16.2951	18.70492
711	S80	-2.038	14.00	24.7292	-10.7292
767	S139	-2.485	10.00	23.0800	-13.0800
784	S157	2.378	35.00	22.4813	12.51866
787	S160	2.421	36.00	23.2562	12.74378
811	S185	-2.109	14.00	25.1035	-11.1035
848	D3	-2.030	13.00	23.6851	-10.6851
937	D93	-2.273	9.00	20.9639	-11.9639
943	D99	-2.786	16.00	30.6632	-14.6632
957	D113	2.794	34.00	19.2933	14.70670
980	D136	-2.351	9.00	21.3743	-12.3743
981	D137	-2.341	9.00	21.3232	-12.3232
1023	D180	2.010	35.00	24.4209	10.57913
1033	D190	-2.071	13.00	23.9019	-10.9019
1042	D199	2.283	30.00	17.9812	12.01880

a. Dependent Variable: Total_IGD

Appendix J

Turnitin Report

Social Phobia and Motivations of Gaming on IGD (FYP 2)

ORIGINALITY REPORT

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SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

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DEPARTMENT OF PSYCHOLOGY AND COUNSELLING
FACULTY OF ARTS AND SOCIAL SCIENCE
UNIVERSITI TUNKU ABDUL RAHMAN

UAPZ 3023 Final Year Project II

<u>**Research Project Evaluation Form**</u>

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Project Title: Social Phobia and Motivations of Gaming as Predictors of Internet Gaming Disorder	
Supervisor: Ms. T'ng Soo Ting	

Student's Name:	Student's Id
1. Jacqueline Kon Jia Min	1. 15AAB03869
2. Low Su Rou	2. 16AAB06556

INSTRUCTIONS:
Please score each descriptor based on the scale provided below:
1. For criteria **1, 2, 3,4, 5, 6**:
   0 = no attempt, 1 = very poor, 2 = poor, 3 = average, 4 = good, 5 = very good

2. For criteria **3,4**:
   0 = no attempt, 1 = very poor, 3 = poor, 5 = average, 7 = good, 10 = very good

3. For criteria **7**:
   Please retrieve the mark from "**Oral Presentation Evaluation Form**".

1. ABSTRACT (5%)	Score
1. States clearly the research objectives. (5%)	
2. Describe briefly and clearly the approach/methodology of the study. (5%)	
3. Highlights the outcomes of the study. (5%)	
4. Highlights the significance of the study. (5%)	
5. Three relevant keywords mentioned. (5%)	
Sum	
Subtotal (*Sum* /5)	**/ 5%**
Remark:	

2. METHODOLOGY (20%)	
1. Appropriate research design/framework (5%)	
2. Appropriate sampling techniques (5%) - Sample size is justified. - Sampling method correctly mentioned - Location of how the subjects are selected	
3. Clear explanation of procedure (5%) - How is consent obtained - Description of how data was collected	
4. Explanation on the instruments/questionnaires used (5%) - Description of instrument measures, scoring system, meaning of scores, reliability and validity information.	
Subtotal	**/ 20%**
Remark:	

3. RESULTS (20%)	
1. Analyses used are appropriate for each hypothesis. (10%)	
2. Interpretations and explanations of the statistical analyses are accurate. (10%)	
Subtotal	**/ 20%**
Remark:	

4. **DISCUSSION & CONCLUSION (25%)**	
1. Constructive discussion of findings. - Explanation and critical analysis. Results were critically analyzed with similar and/or dissimilar results. (10%)	
2. Implication of the study. (5%)	
3. Limitations mentioned relevant and constructive to the study. (5%)	
4. Recommendations for future research. (5%)	
Subtotal	**/ 25%**
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5. **LANGUAGE & ORGANIZATION (5%)**	
1. Comprehensiveness: Content Organization + Language	
Subtotal	**/ 5%**
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1. APA format is followed	
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	Student 1	**Student 2**	**Student 3**
Subtotal			
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Maximum 10 marks for LATE SUBMISSION, MISSING FORM or POOR ATTENDANCE for consultation with supervisor			
	Student 1	Student 2	Student 3
**FINAL MARK/TOTAL			

***Overall Comments:

_____

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_____

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Signature: _____   **Date:** _____

Notes:
1. **Subtotal**:   The sum of scores for each assessment criteria
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FACULTY OF ARTS AND SOCIAL SCIENCE

Full Name(s) of Candidate(s)	Jacqueline Kon Jia Min Low Su Rou
ID Number(s)	15AAB03869 16AAB06556
Programme / Course	Bachelor of Social Science (Hons) Psychology
Title of Final Year Project	Social Phobia and Motivations of Gaming as Predictors of Internet Gaming Disorder

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_____   _____
Signature of Supervisor   Signature of Co-Supervisor

Name:_____   Name: _____

Date:_____   Date: _____