THE RELATIONSHIP BETWEEN PERSONALITY AND ONLINE GAME-PLAYING MOTIVATIONS AMONG COLLEGE STUDENTS

JASNINA JASLIND JOHARI @ UNDERWOOD

FACULTY OF EDUCATION
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JASNINA JASLIND JOHARI @ UNDERWOOD

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Name of Candidate: JASNINA JASLIND BINTI JOHARI@UNDERWOOD
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ABSTRACT

The present study attempts to investigate the relationships between personality and online game-playing motivations amongst college students. A total of 200 college students who are actively playing PUBG (*Player Unknown's Battle Ground*) were approached and voluntarily answered a set of questionnaires which consists of *Mini-IPIP* (*Mini-International Personality Item Pool Scales)* and *Motivation for Play* to measure type of motivations in playing online games. Descriptive analyses were used to analyze the personality traits and in-game motivation of players, Independent Sample T Test to examine gender differences in playing PUBG and Pearson Correlation to examine the relationships between personality and motivations. The results indicated that the most prevalent personality traits among players are *Agreeableness* followed by *Extraversion*. In addition, *Escapism* and *Social* motivation define the players motivation to play. There are significant gender differences in in-game motivation in *Advancement*, *Mechanics*, *Customization* and *Discovery* motivation where males are higher than females in the four motivations. As for the correlation analysis, results indicated that *Extraversion* was positively related with *Advancement* motivation, and *Agreeableness* was positively related with *Teamwork* motivation. Lastly, *Conscientiousness* was positively related with *Competition* motivation. The results further supported the personality and in-game motivation for future research directions.

HUBUNGAN ANTARA PERSONALITI DAN MOTIVASI PERMAINAN ATAS TALIAN DALAM KALANGAN PELAJAR KOLEJ

ABSTRAK

Kajian ini cuba menyelidik hubungan antara keperibadian dan motivasi permainan dalam talian di kalangan pelajar kolej. Seramai 200 pelajar kolej yang aktif bermain PUBG (Player Unknown's Battle Ground) dengan secara sukarela menjawab satu set soal selidik yang terdiri daripada Mini-IPIP (Mini-International Personality Item Pool Scales) dan Motivation for Play untuk mengukur jenis personaliti dan motivasi dalam bermain permainan dalam talian. Analisis deskriptif digunakan untuk menganalisis ciri keperibadian dan motivasi dalam permainan pemain, Ujian T Sampel Tak Bersandar untuk menentukan perbezaan jantina dalam memainkan PUBG dan Korelasi untuk mengkaji hubungan antara keperibadian dan motivasi. Hasilnya menunjukkan bahawa sifat keperibadian yang paling lazim di kalangan pemain adalah *Agreeableness* diikuti oleh *Extraversion*. Selain itu, *Escapism* dan motivasi Sosial sangat tinggi dikalangan pemain. Perbezaan jantina dalam motivasi dalam permainan juga menunjukkan yang pemain lelaki lebih cenderung dan lebih bermotivasi dalam *Advancement, Mechanics, Customization* dan *Discovery* motivasi. Bagi analisa korelasi pula menunjukkan bahawa *Extraversion* mempunyai kaitan positif dengan motivasi *Advancement*, dan *Agreeableness* adalah positif berkaitan dengan motivasi *Teamwork*. Akhirnya, *Conscientiousness* adalah positif berkaitan dengan motivasi *Competition*. Keputusan seterusnya menyokong personaliti dan motivasi dalam permainan untuk cadangan kajian.

ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION

1.1 Background of study

As the Internet revolutionizes our living, online multiplayer games are becoming more adaptable to greater number of simultaneous players as in *Massively Multiplayer Online* (MMO) games. Among the first games of the genre to receive worldwide attention are *"Everquest"* and *"World of Warcraft"*, where these two games are the legacy for another type of MMO known as *Massively Multiplayer Online Role-Playing Game* (MMORPG). Take *World of Warcraft* as an example, approximately 11 million subscribers as in 2008, at its highest peak of popularity (Graham and Gosling, 2013; White, 2008).

Another type of MMO that has become the largest emerging genre is the *Multiplayer Online Battle Arena* (MOBA). MOBA games is where the goals are territorial, reputation and competition-skills based (Johnson, Nacke & Wyeth, 2015; Tyack, Wyeth, & Johnson, 2016). MOBA is relatively a new genre which are influenced from *Role-playing games* (RPGs), *First-Person Shooter* (FPS) games, and *Real Time Strategy* (RTS) games (Tyack, Wyeth and Johnson, 2016). MOBA games are typically played with a team of four players. Each of these players fills a specific role on their team giving rise to different player type models (Yang, Harrisons and Roberts, 2014). The crucial aspect of MOBA is the requirement for gamers to perform teamwork to push their ranking or to level up which associate with competitiveness (Gilsang, Jaebum, Jaechun, Jeahong, and Kichun, 2018) and a new addition to MOBA game is called *Player Unknown's Battle Grounds*.

Player Unknown's Battle Grounds (PUBG) is an online multiplayer battle *royale* game typically played with four in a team, duo or solo. The game mechanics allow you to communicate with your team through voice chat. The PUBG online gaming stream for North America, South America, Europe, and Asia. Briefly, PUBG starts with the need for the players to land on any location they desire based on the map they have chosen. There are three maps currently and known as *Erangle*, *Miramar*, and *Sanhok*. The players will then loot things such as weapon, bullets, med kits, etc to be ready before they battle with enemies (e.g: real players). While looting they might encounter enemies which they have to outwit. A timer will be set for the players to move to safe zone as the map is getting smaller, if they failed to get to the safe zone they will be knocked out and died out of the play zone. The players will have to ensure they lasted through the end and win the game and attain the *'Winner Winner Chicken Dinner'* title. In order to win the game it is important for players to perform great teamwork, or high skilled if it is a solo game. It depends on players technique to win the game either they are all out for an ambush where they will land on famous spot or remain low key but lasted throughout the game to win it. Thus, the idea of the game is not about how many you could kill but to be the last one who survived. However, medals of achievements and ranking also play part for instance, if one have killed numbers of enemy, will be entitled for terminator medal. Therefore, although number of killed enemies do not determine the winning of the game but it compliments through one's achievements, medals and ranking.

PUBG offers great mechanics and immersive elements of game play, in fact it has significantly proved itself a successful game with super massive simultaneous players at any given time of approximately 3 million players around the world. Studies have pointed out that online gaming has tremendously increase the effect of

competition (Jia, Xu, Karanam, & Voida, 2016). Consequently, in September 2018, there was a major tournament in Dubai with $600,00 prize tool. *Star Challenge Global Finals* was held across other regions such as, Europe, North America, South America. However, Asia region has collected the highest points and kills. Surprisingly, the winner goes to a team from Thailand name *RRQAthena* and they were awarded $200,000 prize money. All these shows how tremendous the PUBG has influenced our world.

Personality traits are very important factor when one is on virtual reality (Kauber & Nauper, 2013) and is known to be associated with in-game behaviours (Graham & Gosling, 2013; Shih-Ping & Ching-I, 2008). This is because virtual reality requires high senses of auditory, and visual in which shares similar characteristics with games as it serves as virtual environment (Billieux, et al., 2013). In recent years, a considerable amount of literature has been published on personality of gamers. Most studies on the relationship between personality traits and games has been focused primely on aggression and violence (Karpinskyj, 2013; Scharkow, Festl, Vogelgesang, & Quandt, 2015; Sigurdsson, Gudjonsson, Bragason, Kristjansdottir, & Sigfusdottir, 2006; Markey & Markey, 2010; Zammito, 2010). Taking the recent findings based on MOBA games, Park, Song and Teng (2011) found that *Agreeableness* and *Extraversion* is highly associated with personality of players. Jeng and Teng (2008) have found that *Openness* and *Conscientiousness* is positively related, however they also discovered that *Neuroticism* is negatively related. Recently, Ferro (2018) found that there is a significant correlation between the players personality in online games however but personality of players do not influence preferences for types of games. In general, some studies has indicated that gamers are high in *Openness* and *Extraversion*

while others found gamers are low in *Openness*. Personality of players are found to be high in *Openness* and positively correlated with *Extraversion*.

In other words, there are mixed findings reported on this issue. For instance, many existing work on personality of players found that *Extraversion* is highly related with personality of players (Andreassen, et al., 2013; Ferro, 2018; Jiz, Xu, Karanam & Voida, 2016; Park, Song, & Teng, 2011). However, there are also past studies that found *Extraversion* is the least trait that associated with players personality (Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017). Others found that, *Agreeableness* is positively correlated (Park, Song, & Teng, 2011; Kober & Neuper, 2013) and some found it is negatively related (Chen, Tu, & Wang, 2008; Ferro, 2018). *Openness* was the highest traits found in gamers (Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017; Jia, Xu, Karanam & Voida, 2016; Liang, 2012) while others quite the opposite where *Openness* is nil (Andreassen, et al., 2013; Peter & Malesky, 2008).

Similar mixed findings in Eastern countries, for example in Taiwan, Liang (2012) found *Neuroticism, Openness, Extraversion,* and *Conscientiousness* are highly related with personality of players and *Agreeableness* is the least trait that is evident. Speaking of studies in Malaysia, there is no existing studies as to date. In sum, previous studies on this issue reported mixed findings which bring to the first issue of the present study which is what are the personality traits of players? These issues will be discussed further in Section 1.3.

Online gaming offer a variety of experiences, that allow one to have different motives for playing or would have significant reasons to play games (Bartle, 2003; Billieux et al., 2013 Yee, 2006, Yee 2002). In fact, with the evolving game

mechanisms and social interaction flexibility may influence player motivations even greater (Kahn et. al, 2015). Past studies suggested that online game players have different motives which lead to various reasons and pattern of in-game behaviors (Yee, 2006). Recent findings on motivation of players indicated that players expressed high motivation on all dimensions of motivation for playing games. Researchers found that players are highly motivated by *Role-playing*, *Customization*, *Escapism*, and *Achievement* (Chang & Zhang, 2008; Kahn et al., 2015; Lo, Lie, & Li, 2015; Šporčić & Glavak-Tkalič, 2018). Despite the significant findings on motivation, it is still rather inconsistent. For instance, other researchers found that *Escapism* was the highest in-game motivation (Billeux et al., 2013; Dauriat et al., 2011; Demetrovics et a;., 2011; Yee 2006) meanwhile, *Social* motivation was the highest that is found in players (Blinka & Makuška, 2014). In addition, a study in Malaysia also found that players are motivated by *Social* factor while playing games (Rubijesmin, 2007). On the other hand, Turkey and Adinolf (2015), found that players are mostly motivated by *Customization*. In sum, previous studies reported contradictory findings on motivation of players in online gaming. Hence, this leads to the second issue of the present study which is what are the in-game motivation of players?

Gender is also an important variable in understanding motivation of players for playing online games. Yee (2006) demonstrated that male players scored significantly higher on all *Achievement* components, while female players scored higher on *Social* component. The finding is different to Park, Song and Teng's study in 2011 where they have found that gender affect motivation significantly, as female gamers exhibited a stronger motivation to develop and sustain relationships in games compared to male gamers. On the other hand, recent findings by Bowman, Schultheiss and Schumann (2012) stated that male gamers were most likely to be antisocial while Cole and

Griffiths (2007) found that both male and female are good at socializing. In short, there is no consistency as to how gender affect players motivation. Therefore, this study attempts to address the third issue of the present study which is what are the gender differences in in-game motivation? Further discussion on gender differences will be explained in Section 1.3 and Chapter 2.

As to date there are only a few studies that attempted to explore the relationship between personality of players and in game motivation (Cole & Hooley, 2013; Graham & Gosling, 2013; Jeng & Teng, 2008; Park, Song, and Teng, 2011) and there is no existing work on the issues in Malaysia. Players who motivated by social factor showed high traits of *Extraversion, Agreeableness, Neuroticism,* and *Openness* (Cole & Hooley, 2013; Graham & Gosling, 2013). Meanwhile, other researchers found that players motivated by *Immersion, Achievement,* and *Escapism* have high relationships with *Extraversion* (Park, Song, & Teng, 2011). Apparently, players motivated by *Achievement* showed high in *Extraversion* and *Neuroticism* and low on *Agreeableness* and *Conscientiousness* (Graham & Gosling, 2013). Furthermore, it is important to understand the relationships between personality traits and in-game motivation of players as MOBA specifically PUBG has been one of the phenomenon game in Malaysia. It is crucial to understand the psychological aspects of gamers in terms on personality of gamers that highly associated with game behaviours (Graham & Gosling, 2013) and their in-game motivation. Clearly, the existing studies reported mixed findings which lead to the final objective of present study which is to explore the issue further in understanding the relationship between personality and motivations of gamers in playing PUBG.

1.2 Rationale of study

This study is important as it will understand the depth of the five factor model (Mc Crae & Costa, 1996) better in the aspect of the local context of PUBG players. Moreover, this study will also comprehend extensively the motivation for play theory (Yee, 2006) and gender differences in better view specifically of PUBG players in local context.

Furthermore, this study combine five factor model (Mc Crae & Costa, 1996) and motivation for play (Yee, 2006) to understand relationships of both theories as past studies are still inconclusive thus to produce comprehensive findings and contribute to the knowledge.

Lastly, this study is focussing on the relationships between personality of players and in-game motivation of players exclusively on PUBG which has been mentioned in Section 1.1, PUBG is currently the most popular online games worldwide. Hence, this game is worthy to study which allow this study to explore more in the local context.

1.3 Problem Statement

The first objective of this study is to identify the personality traits of players in online game. As mentioned in Section 1.1, personality traits are important factors when one is on virtual environment because players will demonstrate their own persona and in return influence the gaming environment (Ferro, Waltz, & Greuter, 2013). This affirmed that individuals personality traits will contribute to the whole game environment (Jia, Yuan, Bin Xu, Yamini & Stephan, 2016; Klock, Ana, Isabela,

Marcelo, & Jose; 2015; Nagel, Aniket, Peter, & Robert, 2016; Toker, Dereck, Ben, & Max, 2014).

The majority of previous studies have been focussing on personality and aggression (Karpinskyj, 2013; Markey & Markey, 2010; Scharkow, Festl, Vogelgesang, & Quandt, 2015; Zammito, 2010), players in-game personality and game preferences (Braun, Stopfer, Müller, Beutel & Egloff, 2016; Graham & Gosling 2013; Marvel, 2017; Worth & Book, 2015), and personality and gaming disorder (Anderson & Dill, 2000; Boone Brabander, Witteloostuijin, 1999; Peters & Malesky, 2008; Worth, Narnia, Angela, 2014). All these highlight the importance of personality on influencing gaming behaviour.

Presently, as mentioned in Section 1.1, studies on personality are primely centralized on Western countries (i.e., Johnson, Nacke, & Wyeth, 2015; Kober, Neuper, 2013; Reer & Krämer, 2017; Yee, Ducheneaut, Nelson, Likarish, 2011). Researchers who explored the personality of players reported that *Extraversion* is highly related with personality of players (Andreassen, et al., 2013; Ferro, 2018; Jiz, Xu, Karanam & Voida, 2016; Park, Song, & Teng, 2011), but Formica, Gaiffi, Magnani, Mancini, Scatolini, and Ulivieri (2017) found that, *Extraversion* is the least trait that associated with players. Others found that, *Agreeableness* is positively correlated (Park, Song, & Teng, 2011; Kober & Neuper, 2013) and negatively related (Ferro, 2018). *Openness* was the highest traits found to be related (Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017; Jia, Xu, Karanam & Voida, 2016; Liang, 2012) however, it is found negatively related in Andreassen, et al., (2013)'s study even none in Peter and Malesky (2008)'s study. Studies focussing on the West found that video game addiction is positively correlated with neuroticism, and

negatively with *Extraversion, Agreeableness* (Peters & Malesky, 2008) and *Conscientiousness* (Andreassan et al.,2013; Malesky, 2008 & Wittek et al., 2015). In contrast, *Extraversion* is negatively correlated (Bianchi & Phillips, 2005) when Lane and Manner (2015) reported that *Extraversion* is positively correlated. Similarly, Billuex et al., (2011) found there is no *Openness* discovered. Quite the contrary, in Eastern countries for instance, in Taiwan, *Neuroticism, Openness, Extraversion,* and *Conscientiousness* are highly related with personality of players and *Agreeableness* is the least trait that is related with players (Liang, 2012). Obviously, all the findings on the personality of players so far are mixed. Therefore, the present study will further explore the issue to better understand of which personality is prevalent in gamers.

Although there are many international studies on personality traits of players, studies on Asian countries are lacking. Past studies have indicated that players do not have same practices, values or culture which all are significant to one's personality traits, thus it is relevant to find out the players personality based on local context (Kwon, Nah, & Moon, 2010). For example, East Asian people are found to be average on *Extraversion* while Western people found to be low in *Neuroticism* which indicate they are more stable emotionally, East Asian reported to score low in *Openness* and *Agreeableness* and opposite direction for Western people (Kajonius, 2017). In Taiwan, Shih-Peng and Ching-I (2008) studied about personality of online gamers among undergraduates with various ages. They found that *Openness, Conscientiousness, Extraversion* and *Agreeableness* is positively correlated, however, *Neuroticism* is negatively correlated. While in Hong Kong, Wang, Ho, Chan, and Tse (2015) studied about the relationships between personality traits and gaming addiction on secondary school adolescents that comes from different districts. They found that *Neuroticism* and *Extraversion* is higher and lesser in *Conscientiousness* and *Openness*. As

introduced briefly in Section 1.1, evidently, the existing findings are varied and inconsistent. Hence, there is a need to find out what is the prevalent traits of players.

In addition, past studies on personality traits found that *Agreeableness* is prominent in South and Southeast Asian people (e.g: Bangladesh, India, Indonesia, Malaysia, and Philippines) while East Asian countries are high in *Openness* (e.g. China, Japan, Korea, and Taiwan) (Schmitt, Allik, Mccrae, & Benet-Martínez, 2007). These findings highlight that one's personality would varies according to one's culture (Kwon, Nah, & Moon, 2010). Although studies mentioned were not specifically on players but it is very contradictory with the previous study in which no *Openness* was discovered (Andreassan et al.,2013; Bianchi & Phillips, 2005; Malesky, 2008; Peters & Malesky, 2008 & Wittek et al., 2015). Therefore, Asian culture do show positive correlation with *Openness* (Shih-Peng & Ching-I, 2008). Based on these explanations, there is a need to explore the gamers personality traits based on local context.

Most studies in Malaysia are focussing on education-based games (Azli, Azan, & Bahri, 2008; Ibrahim & Jaafar, 2009; Hussain, Tan, & Idris, 2014). Talking about multi-player online gaming studies in Malaysia, there are studies on values in MMROPGS (Rezaei & Ghodsi, 2014), factors to increase customer loyalty to online games (Choi & Kim, 2004), theory of planned behaviour in game playing among undergraduates students (Alzahrani et al., 2017). On the other hand, personality traits found to be affecting knowledge sharing behaviour (Pei, Chen, Chin & Siew, 2017) life satisfaction (Chen, Tu, & Wang, 2008) and internet addiction (Alam et al., 2014; Chong et al., 2015; Kapahi, Ling, Ramadass, & Abdullah, 2013). All these indicate that how personality play a role in determining the negative aspects of human behaviour. In other words, referring to this study gaming behaviour it is considered as negative behaviours. However, there is yet a study on PUBG. Therefore the present

study will explore the personality of PUBG players in Malaysia, specifically on college students in Klang Valley area.

Another purpose of this study is to identify the motivation of players on online game. Studies so far have demonstrated that motivation is essential to foster attention in games, and investigated its effect or prominence to players in relation to engagement in game. One recent study by Šporčić and Glavak – Tkalić (2018) found that players have expressed high motivation in games, and *Escapism* appears to be the highest predictor in online gaming. Similarly, previous studies affirmed that *Escapism* is one of the predictor in motivation of players when ones' motivated by *Escapism*, they will have high possibilities to withdraw from reality into the virtual worlds (Billeux et al., 2013; Dauriat et al., 2011; Demetrovics et a;., 2011; Yee 2006). Apparently, Turkey and Adinolf (2015) reported differently where they found that players are highly motivated by *Customization* which related with Immersion as key mechanism of online games is avatar-based whereby players could spend considerable amount of time to customize their character. Blinka and Makuška (2014) found that players are motivated by *Social* which they find it satisfying to play with numerous random people online and their *Social* motivation is develop through the communication they engaged. As described in Section 1.1, players motivation are found to be varied and no consistency reported by previous studies.

Other than the issue of mixed findings, majority of previous studies on players motivation in online gaming are conducted in Western countries (i.e., Billieux, et al., 2013; Dickey, 2006; Fuster, Chamarro, Carbonell, & Vallerand,2014; Huang, Yang, & Chen, 2015; Kahn, et al., 2015; Ryan, Rigby, & Przybylski, 2006; Yee, 2006; Yang & Liu, 2017). There are differences in the findings probably due to different values or

beliefs (Kwon, Nah, & Moon, 2010). For example, Przybylski (2007) found that, autonomy, competence, and relatedness are satisfying in motivations for online gaming. These findings are very contradicting with other countries, for instance, in Germany, *Competition, Escapism*, playing solo/exploration, and anger/taunting were discovered to be the motivations (Schultheiss, 2007) while in United Kingdom, competition, interest, sociability, and relaxation appeared as the motivations to play online games (Jansz & Martens, 2005).

As mentioned, motivation is a vital factor to keep one's up in the online environment. According to Yee (2006) each individual has different motives when they are in the online game environment, in fact players who has different demographic are motivated differently. In his studies, he has found that one's have high tendency to socialize more since it is an online scenario which connects people around, or one's play a game just because it is an alternative ways for them to diverge or escape themselves from the real world. In addition, players also have the motives to attain more rewards or to have more combats and kills. His argument is parallel with others (ie., Cooper, Khatib, Treuille, Barbero, Lee, Beenen, & Popoćić, 2010; Hamari, Juho, Koivista, & Sarsa, 2014; Lemmen, Valkenburg, & Peter, 2009; Przybylski, Rigby, & Ryan, 2010). Based on these findings on players motivation, apparently results gathered are very inconsistent. Some results shown that players are high in *Achievement* while low in *Social* and *Immersion* or the other way round, hence failed to have consistent motivation. Thus, what will be the motivation among college students in playing online games?

In addition to the above issue, studies from the Asian countries are still scarce. To name a few, in China, Yang and Liu (2017) conducted a study on the motivation

of players based on *Pokémon-Go* mobile game. They found that players are to highly motivated by sociability while negatively correlated with *Escapism*. However, in Taiwan, Wan and Chiou (2006) and Wang et al. (2008) found that players are high in *Escapism*. On the other hand, Chang and Zhang (2008) found that players are highly motivated by *Achievement*. Similarly, in Korea, Sheard and Won (2012) found that players are motivated by *Achievement*. In Malaysia, Rubijesmin (2007) found their Malaysian students shown high motivation in *Social* when in games. In short, all of these findings have shown differences in motivation of players. It is important to understand the in-game motivation of PUBG players as this game is a new addiction to MOBA which highlight the further need to study the differences in motivation in online gaming.

Another purpose of this study is to identify gender differences in online games. Most researchers have used gender as a control variable and found that there is a significant difference to moderate variety of outcomes including skills (Brown, Hall, & Holtzer, 1997), aggression (Sherry, 2009; Tang & Fox, 2016) game content (Ray, 2004) and game preference (Sheldon, 2004). However, there are fewer studies which have used gender to understand players motivation. As mentioned in Section 1.1, gender is one of the important aspect to measure players motivation. So far, past findings found that female players tend to utilize online games as platform to socialize and make new friends (Royse, Lee, Undrahbuyan, Hopson, & Consalvo, 2007; Yee, 2006). On the other hand, male players tend to be anti-social (Bowman, Schultheiss & Schumann, 2012) and they are both particular about achievement (Yee, 2006).

Liu (2016) found that female players tend to be driven by emotional factors in which they are caring and supportive hence the *Social* motivation was the highest

motivation discovered in their studies. Meanwhile researchers found that male players are driven by instrumental factors in which they are very informational in terms of the game skills, scoring more for game skills hence related with *Achievement* motivation (Chang, Wong, Yap & Yap, 2016; Liu, 2016). Female players are also found to be more sensitive compared to male players (Liu, 2016; Yee, 2006). But, Zhang (2013) found that male players are found to be more sensitive compared to female. Chang, Wong, Yap and Yap (2016) found that male enjoyed playing games more than female however, Zhang (2013) found there are no significant difference of the frequency of playing games between female and male players, and equally motivated for challenge and achievement (Yee, 2006; Zhang, 2013). The issue here is, the mixed findings found in previous studies and inconsistency which create a need to study the gender differences in players motivation.

Moving to studies in Malaysia, past studies have indicated that female players are likely to play games for entertainment and *Escapism* while boys are highly motivated by *Achievement* and *Customization*, however both genders are found to be excited by the *Competition* (Latif, 2007). Recent studies explored the theory of planned behaviour in playing online games (Alzaharani, Mahmud, Ramayah, Alfarraj & Alalwan, 2017). They found that both genders are driven to play due to entertainment and *Escapism* motivation. According to these past findings, it is clear that gender differences findings in online games are still tentative. Hence, there is a need to see whether there are gender differences in playing games, specifically PUBG.

The final purpose of this study is to explore the correlation between personality and motivation of players on online game. As mentioned in Section 1.1, personality of players is very important on online game as it may affect the game environment and

game play substantially (Billieux et al., 2013; Kauber & Nauper, 2013). Personality traits of players are crucially associated with their in-game motivation (Graham & Gosling, 2013) and motivation of players is crucial as it determines one motives when they play online games (Billieux et al., 2013; Dauriat et al., 2011).

Presently, there are only few studies attempted to investigate the relationships between personality and motivation (i.e, Cole & Hooley, 2013; Graham & Gosling, 2013; Jeng & Teng, 2008; Park, Song, and Teng, 2011). So far, psychologist found that players who play to socialize are high on *Extraversion, Agreeableness, Neuroticism*, and *Openness*, whereas players who are motivated by *Achievement* are found to be high on *Extraversion* and *Neuroticism* and low on *Agreeableness* and *Conscientiousness* (Graham & Gosling, 2013).

Contradictory, Park, Song and Teng (2011) found that *Agreeableness* is highly related with *Achievement* motivation not *Social*, *Agreeableness* and *Extraversion* is positively related with *Escapism* motivation again not *Social*. In addition, their findings on motivation is also very contradictory with Jeng and Teng (2008). The researchers have found that *Openness* is positively related with discovery motivation, *Conscientiousness* is positively related with *Escapism* and *Neuroticism* was shown negatively related with teamwork motivation while, Graham and Gosling (2013) found *Conscientiousness* is least related. There is no *Agreeableness* found in Jeng and Teng (2008). Although, Park, Song, and Teng (2017) and Jeng and Teng (2008) are based in Asian society, the findings are unclear due to various conclusions despite both studies were from the same context. As mentioned in Section 1.1, players demographic do affect the personality and the motivation (Kwon, Nah, & Moon, 2010) which bring to the concern of why there is still discrepancies of findings.

Due to all the issues raised are considered new, there is no studies pertaining to the issues has ever demonstrated in Malaysia, and since players in Malaysia has been growing radically therefore there is a need to explore this issue deeper. This leads to the final issue of the present study which is, what are the relationships between players personality and motivation in online games?

1.4 Objectives of the Study

The objectives of the present study are as follows:

1. To determine the personality traits of players of PUBG.

2. To ascertain the game-playing types of motivation of players on PUBG.

3. To examine gender differences on PUBG.

4. To examine the relationship between personality traits and online game-playing motivations.

1.5 Research Questions

Based on the objectives of study, below are the research questions:

1. What is the personality trait of players playing PUBG?

2. What is the in-game motivation of players playing PUBG?

3. Are there any gender differences in players motivation?

4. What is the correlation between personality traits and online game-playing motivations?

1.6 Hypotheses

Based on the research questions, below are the hypotheses:

Ho_1: There is no significant of gender differences in-game motivation.

Ha_1: There is significant difference in gender differences in-game motivation.

Ho_2: There is a no significant relationship between personality traits and online game playing motivations.

Ha_2: There is significant relationship between personality traits and online game playing motivations.

1.7 Significance of Study

Since the arrival of massively multiplayer MOBA generation of games to name a few that are *Clash of Royale* from *Clash of Clans*, *League of Legends* and the newest addition - PUBG. MOBA game mechanics qualifies the game as a real-time and skill-oriented game with a high level of strategy required to cooperate with team members, the gaming activity replicates sports although being in the form of digital entertainment. Hence, valuable insights are to be gained for the perspective of players, critics, game developers and the public when the relationship of personality traits and online gaming motivations is established particularly in PUBG. It is important to study the personality traits of players in the ever popular multiplayer game environment now that a previous study by Johnson and colleagues (2015) have discovered MOBA games lacking most components of player experience when compared to other game genres. In addition, this study will contribute to the future games developer and the pertinent

associations. The thriving community of players on these games which each of them varied in personality and their motivation is in question.

The findings of the study will redound to the benefit of society considering that online games play an important role to one's hobby or social withdrawals today. The greater the demands for gamers to play online games justify the need to better understand their psychological aspects. Specifically, in their personality traits and in-game motivation as personality play a role in determining the negative aspects of human behaviour (Alam et al., 2014; Chong, 2015). Parents and teachers will be aware of their children and students' withdrawals which to have some kind of supervision in order to ensure that online games will not lead to concerning in negative behaviours such as aggression in playing games (Tang & Fox, 2016) and addiction (Kapahi, Ling, Ramadass & Abdullah, 2013).

The present study is an early attempt to explore the relationships between personality trait and motivations for play amongst college students specifically based on fast widespread PUBG game in Malaysia. Probably the uniqueness of ever growing number of players playing PUBG will contribute to the issue of personality and motivation hence this issues should be studied.

1.8 Operational Definition

1.8.1 Five Factor Model

Five Factor Model of Personality Traits is a model that refers to all personality traits which can be categorized under the 5-factor model namely; *Extraversion, Agreeableness, Conscientiousness, Neuroticism* and *Openness*. Past studies indicated

that the traits have genetic basis (Digman, 1989; Goldberg, 1990; Judge, Higgins, Thoresen, Barrick 1999). This concept has been used by many researchers to understand human behaviour and individual's potential for performance based on their personality traits (Chittaranjan, Blom, & Gatica-Parez , 2011; Furnham, Monsen, & Ahmetoglu, 2009; Lin, 2010; Soldz & Vaillant, 1999).

Openness describes as one's creativity to explore with substantial amount of curiosity to experiment and ideas are up to one's intellect. *Conscientiousness* is all about planning, to achieve certain objective and dutifully establish the ideas. *Extraversion* explains as assertiveness, liveliness, positive emotions, and sociability. *Agreeableness* is one's compassion and demonstration of cooperation. *Neuroticism* refers to one's emotional such as anxiety, anger, and to able to control the emotion which often relates to emotional stability (Goldberg, 1981).

High scorers on *Openness* are usually intrigued in making new experiences, are very flexible of variety of choices and willing to go extra mile in seeking fulfilment. On the other hand, low scorers are always cautious and predictable as consistency are the key, and very realistic too. High scorers on *Conscientiousness* are very organized and inclined to be high in self-discipline. Meanwhile, low scorers tend to be very flexible and spontaneous which sometimes they seem to appear as careless. High scorers in *Extraversion* are perceived as very outgoing and vibrantly intrigued when it involves talking, domineering, and centre of attention. On the other hand, low scorers tend to be more self-absorbed and highly reflective. Often, very reserved due to shy personality. As for *Agreeableness* are very cooperative, and opened to discussion as they appeared to be compassionate and friendly. While low scorers, are logical and argumentative. In fact, they are very competitive and love to be challenged. Last but not least, high scorers on Neuroticism tend be vulnerable to stress as they are over

thinker and may perceive situations as threatening to them due to a high emotional reactiveness. Meanwhile, low scorers perceived as emotionally stable and calm (Chittaranjan, Blom, & Gatica-Parez, 2011; Furnham, Monsen, & Ahmetoglu, 2009; Lin, 2010; Soldz & Vaillant, 1999).

Mini-IPIP Scales (Donellan, Oswald, Baird, & Lucas, 2006) which consists of 20 items to measure the 5 personality traits. More explanation about the measurement will be further explain in Section 3.2.

1.8.2 Motivation for online game-playing

Motivation for online game-playing in the present study refers to Yee (2006) motivation for players which has derived and regrouped from *Bartle's Player Types*. *Bartle's Player Types* is a grouping of type of players which build on a taxonomy of character theory (Bartle, 1996). The grouping generally described players of *Multiple Online Games* (MMO) as well as a single-player. Bartle's categorization is considered as most fundamental method of classification and has been highly suggested by Werbach and Hunter (2012) for explaining motivation for game-playing. The types of the motivation entails of *Achievers, Explorers, Socializers, and Killers.*

Achievers tend to use the opportunity to boast their achievement in playing games for instance, ranking, elite status, rewards attained and so forth. They are highly driven to meet the objectives of the game only and as well as the side bonus like getting mysterious items or completing unexpected missions, in return they are the ones who are highly to invest longer period of time to attain more rewards, currency or items in rising character level. *Explorers* are the most curious players and can be adventurous at times. For instance, they are likely to discover new tricks, hidden place, and so forth.

Whereas, *Socializers* will take full advantage of virtual environment to start making new friends through private messages or voice chat depending on the game mechanics. They tend to be very active on forums and highly to be recognized by other players. They would also spend more time in listening to people and to sympathize or empathize them. Lastly, *Killers* are highly associated with power, action, and dynamic energy to hunting. The more injuries or death they caused to the opponent the more satisfaction they will get.

Yee (2006) conducted a research on motivations in online games by using the *Bartle's Player Types*. He found that there are too many similar traits between the types hence he suggested the taxonomy to be reconstructed and regrouped into 3 components by classifying players' common motivations and interests. Achievement component which inclusive of *Advancement, Mechanics, and Competition.* Social component which inclusive of *Socializing, Relationship and Teamwork.* Lastly, Immersion which inclusive of *Discovery, Role-Playing, Customization.* The classification has been used extensively by other researchers on players motivation (Chen, Duh, Phuah, & Lam, 2006; Farltin, 2010; Hoffman & Nadelson, 2009; Roiji, Schoenmakers, Vermulst, Eijenden, & Mheen, 2010; Young, 2009).

Using factor analyses, Yee (2006) found that each type of Achievement, Social, and Immersion motivation has its own sub-category. For example, Achievement motivation, there are advancement, mechanism, and competition. As for Social, the sub-categories are socializing, relationships, and teamwork. More details are in Table 1.1.

The present study will use the Yee's 3 types of motivation which are in Table 1.1.

Table 1.1

Types of Motivation for Play

Types	Achievement	Social	Immersion
Sub-Categories	Advancement Progress, Power, Accumulation, Status	Socializing Casual chat, Helping others, Making friends,	Discovery Exploration, Lore, Finding hidden things
Sub-Categories	Mechanics Numbers, Optimization, Templating, Analysis	Relationship Personal, Self-disclosure, Find and Give support	Role-Playing Story line, Character History, Roles, Fantasy
Sub-Categories	Competition Challenging others, Provocation, Domination	Teamwork Collaboration, Groups, Group achievements	Customization Appearances, Accessories, Style, Color schemes
Sub-Categories			Escapism Relax, Escape from real life, Avoid real life problems

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter will review past studies on personality traits and its components. In addition, players motivation and how it relates to personality will also be reviewed. Last but not least, studies on gender differences in players motivation will also be presented in this chapter.

2.2 Theoretical Framework

This present study is using *Five Factor Model* (FFM) (Mc Crae & Costa, 1999) and *Motivation for play* (Yee, 2006). Further explanation will be in Section 2.2.1 and 2.2.2.

2.2.1 Five Factor Model Taxonomy

In the past few decades, FFM was diversely labeled the five-factor model, the Big Five or eminently The High Five (Mc Crae & Costa, 1999) the taxonomy of personality traits has received utmost attention and support from personality researchers and also in self-reports on trait descriptive analysis (Saucier, 1997). The five-factor model was initially based on a combination of lexical approach which started in 1930s with revolutionary by Allport and Odbert (1936), in which they identified 17,953 traits. Allport and Odbert divided the traits into four lists which are, *stable traits*, *temporary states*, *social evaluations*, and *metaphorical physical, and doubtful terms.* The first term which is *stable traits* was then used by Cattell (1943) as a starting point for his lexical analysis of personality traits. However due to limited

power of computers he has to reduce the term to smaller set of 171 clusters of traits by disregarding some traits and he ended with a set of 35 clusters of personality traits.

The 35 clusters from Cattell (1943) was subsequently used by Fiske (1949) who discovered through factor analysis, a five-factor solution. Although Fiske was acknowledged as one of the first person to discover a version of personality traits, however due to small sample used in his study he was not credited with who identified its first and defined structure. Next major contribution to personality traits was discovered by Tupes and Christal (1961) who examined the factor structure of the 22 simplified in eight samples of, *surgency, agreeableness, conscientiousness, emotional stability,* and *culture.* This factor was successfully simulated by Norman (1963) and followed by other researchers (e.g., Botwin & Buss, 1989; Digman & Inouy, 1986; Goldberg, 1981 Mc Crae & Costa, 1985; Rammstetd et al., 2010).

More than 25 years ago, researchers have numerously conducted research on the Big Five and undeniably, the Big Five taxonomy has achieved a superior degree of consensus than any other trait taxonomy in the history of personality trait psychology. McCrae and Costa (1999) affirmed that the five traits have proven that the personality traits deemed as interesting to psychologist because it explains the individual person of chosen to focus of per-sonologists. However, there are three concerning key issues that is also generated. Firstly, what is the empirical evidence for the five-factor taxonomy of personality? Secondly, what is the identity of the fifth factor? And lastly, is the Big-Five taxonomy really comprehensive, or are there major trait dimensions that lie beyond Big Five?

The five-factor model and trait theory has been replicated in every decade for the past half-century (e.g., Goldberg, 1981, 1990; John et al., 2008; Mc Crae & Costa,

2008) using different samples. In fact, it has been replicated in different languages and in different item formats (Rammstetd et al., 2010). Each of the five global personality factors categorized into specific components which provide a lot of elusiveness and nuance. The trait of Conscientiousness, for instance, includes six facets which are *competence, order, dutifulness, achievement striving, self-discipline, and deliberation.* Though, the traits are presented in a different order (N, E, O, A, C) than the Goldberg order, and few cases of the traits given by different names, the fundamental personality traits are very likely to be equivalent to those found by Goldberg.

While the five-factor model traits have accomplished exquisite replicability across item formats, samples, and researchers, there is still some disparity about the content and items of the fifth factor. Distinctive researchers have labeled this fifth factor as *culture, intellect, intellections, imagination, openness, openness to experience,* and even *fluid intelligence* and *tender mindedness* (Brand & Egan, 1989; De Raad, 1998). The major cause of the disparity is due to different researchers start with different item pools to analyze. In fact, those who start with the lexical strategy and use adjectives they would prefer to use *intellect* as the label of the fifth factor (Saucier & Goldberg, 1996). In the opposite, researchers who use questionnaire items would choose *openness* or *openness to experience* because apparently this label better reflects the content of those items (Mc Crae & Costa, 1997, 1999, 2008). However, there is a way to resolve these differences. According to the lexical approach, traits that emerge universally with different languages and cultures are more important than cross-cultural universally. A study was conducted in Turkey, a clear fifth factor is best described as *Openness* (Somer & Goldberg, 1999). Some researchers criticized that the first fourth factors are very much replicable across cultures and languages, however more research shall be conducted particularly in African cultures and in more

traditional cultures that are minimal influenced by Western culture to better understand *Openness* universally (De Raad er al., 2010).

As mentioned above, over the specifically last 15 years remarkable volume of research has been conducted on the empirical correlates of each of the five factors, which has widely used to grasp human behavior and one's performance based on their traits (e.g., Chittaranjan, Blom, & Gatica-Parez, 2011; Furnham, Monsen, & Ahmetogly, 2009; Lin, 2010; Soldz & Vailant, 1999). Some recent interesting findings will be further explained below.

Extraversion, they love to cooperate more than the introverts (Hirsh & Peterson, 2009). From the extravert's perspectives they cherish they the crowd and would have greater influence on the social environment and often relates with leaderships qualities (Jensen-Campbell & Graziano, 2001) in fact they were found to excel at work environment too (Burke, Mattheiesen, & Pallesen, 2006). Furthermore, the downsides of extraverts like to drive fast and listen to music while driving and subsequently get into more car accidents and even road fatalities compared to introverts (Lajunen, 2001).

Agreeableness, they favor to always get along with everyone and usually used negotiation to resolve conflicts meanwhile, low-agreeable persons try to affirm their power to resolve conflicts (Graziano & Tobin, 2002; Jensen-Campbell & Graziano, 2001). In addition, agreeable person is likely to avoid conflicts or any uncomfortable situations which deteriorate harmony and they would actively value social interaction and would disguise people who are anti-social (Kammrath & Scholer, 2011). In Italy, politicians are found to be high on agreeableness (Caprere et al., 2003) and highly

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empathetic toward other people's feelings and a fond of forgiveness (Nettle & Liddle, 2008).

If agreeable people get along very easily, then *Conscientiousness* persons are very persistent to get ahead. For instance, they are achievers in school (Conrad, 2006; Noftle & Robins, 2007; Poropat, 2009) highly committed in with their job and social relationships (Langford, 2003). However, low-conscientiousness individuals tend to score low in grades and perform weakly at work. Moreover, they do not procrastinate their work (Lee, Kelly, & Edward, 2006). They are also perfectionist at what they do and will set a specific goals and standards for themselves (Cruce, et al., 2012; Stoeber, Otto, & Dalbert, 2009).

Emotional stability, or *Neuroticism* (Mc Crae & Costa, 2008) low in *Neuroticism* individuals are very stabled emotionally as they cope with their daily stress. They are able to remain and appear calm whenever to go through their stresses (Murray, Allen, & Trinder, 2002). Referring to psychologically aspects, high in emotional stability usually lead to dissociate experiences such as inability to recall any important life events, often feeling disconnected then the real world and feel excluded from the society (Kwapil, Wroble, & Pope, 2002). In addition, high neuroticism individuals will outperform their emotional stability at work when there are unusual changes which lead to over thinking and prone to stress (Smillie et al., 2006).

Openness has been related with experimentation with new experiences to trying out new foods, reading genres, and somehow extramarital affairs (Buss, 1993) and interestingly, they can be people who would get body tattoos and body piercing (Nathason, Paulhus, & Williams, 2006). However low-openness individuals tend to resist new ideas as they are comfortable with what is normality or better opt for safer

ideas (Mc Crae & Costa, 1987). In addition, they demonstrate less prejudice against minority groups and are less likely to hold negative racial stereotypes (Flynn, 2005).

As asserted by Kajonius (2017), personality traits vary not only between individuals but also between geographical areas; for instance, London districts in levels of FFM personality traits, with the more open minded, extraverted, and less agreeable people leaving closer to the city. Meanwhile East Asian are categorized as low in Extraversion (Allik & Mc Crae, 2004), Openness (Bartram, 2013) and in Neuroticism (Kojonius & Giolla, 2017). Meanwhile East Asian people are considered high in Agreeableness (Schmitt, Allik, Mc Crae & Benet-Martinez, 2007). FFM personality traits measurement has also been shown to be largely equivalent across nations (Schmitt et al., 2007). Based on these perceptions, Malaysia district in levels of FFM personality traits is highly related with East Asian people (Schmitt, Allik, Mc Crae & Benet-Martinez, 2007). As shown is figure 1.1 the framework of five factors of personality of determining the high and low scorers.

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                                              ┌─────────────────────────────────────┐
                                              │              Openness                 │
                                              │ High scorer: They are excited to make new │
                                              │               experience              │
                                              │ Low scorer:  They tend to be cautious and very │
                                              │               consistent              │
                                              └─────────────────────────────────────┘

                                              ┌─────────────────────────────────────┐
                                              │          Conscientiousness            │
                                              │ High scorer: They are very organized and high │
                                              │            in self-discipline          │
                                              │ Low scorer: They are very flexible and │
                                              │               sponteneous              │
                                              └─────────────────────────────────────┘

┌──────────────────────────┐                 ┌─────────────────────────────────────┐
│                          │                 │             Extraversion              │
│     Five Factor Model    │                 │ High scorer: They are very outgoing and the │
│                          │                 │           centre of the attention      │
└──────────────────────────┘                 │ Low scorer: They are self-absorbed and highly │
                                              │               reflective              │
                                              └─────────────────────────────────────┘

                                              ┌─────────────────────────────────────┐
                                              │            Agreeablenesss             │
                                              │ High scorer: They are very cooperative │
                                              │ Low scorer: They are logical and less  │
                                              │               cooperative              │
                                              └─────────────────────────────────────┘

                                              ┌─────────────────────────────────────┐
                                              │              Neuroticism              │
                                              │ High scorer: They are prone to stress as they │
                                              │          are those over thinkers       │
                                              │ Low scorer: They are emotionally stable and │
                                              │                 calm                   │
                                              └─────────────────────────────────────┘
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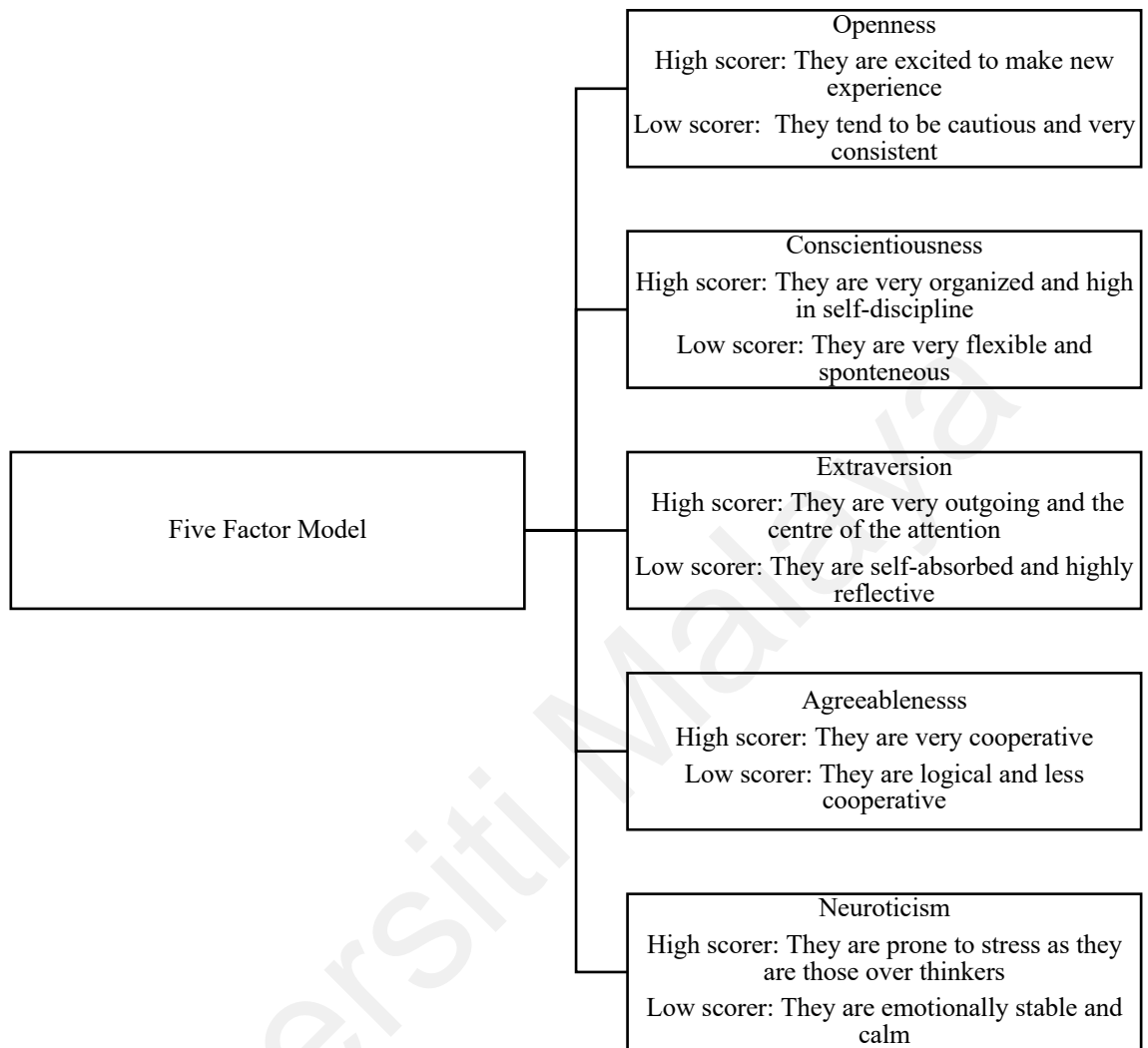
Figure 2.1: The framework of Five Factor Model of personality traits Source: Upgrade and Adopted From, McCrae & Costa (1996).

2.2.2 Motivation for Play

The early research on motivation for play online games was conducted Bartle (1996). He identified four factors why people play *Multi-User Dungeons* (MUD: is the first antecedent of MMORPG). The four player types are *achiever, killer, explorer, socializer. Achievers* persons are highly driven by goals oriented and getting into the game arena for the sake of winning. *Killers* individuals' motives are being dominant to have their power to dominate others, meanwhile *explorers* tend instigate to explore the whole game concept and mechanics. *Socializers,* are highly motivated to make new friends, create and sustain relationships with other game players. However, there is no empirical testing was done to test his model.

Subsequent to this preliminary framework Yee (2006) has worked on Bartle's four player types, which he has tested 40 items questionnaire to 3000 MMORPGs players. By using factor analyses Yee identified 10 motivational components and compressed it into three major motivational dimensions which are *advancement, social,* and *immersion.* Yee (2006) found that each type of the three motivation for play has its sub-category. For example, *Achievement* which are advancement, mechanics, and competition. As for *Social*, which are socializing, relationship, and teamwork. Lastly, for *Immersion*, which are discovery, role-playing, customization, and escapism. However, the samples in Yee's study, compromising only specific sample of MMORPG. Therefore, Demetrovics et al. (2011) studied 3818 players of various genres discovered that there are seven motivation factors which are *social, escape, competition, coping, skill development, fantasy* and, *recreation.* the researchers developed 27-item motives namely *Motives for Online Gaming Questionnaire* (MOGQ).

Ferro et al. (2013) later work on Bartle's and eventually added new factor to the player types, which are *objectivist*, *dominant*, *inquisitive*, *humanist*, and *creative*. Soon, Fullerton (2014) defined nine different player types: *achiever, artist, explorer, director, competitor, collector*, and *joker*. Nevertheless, there is no empirical studies on the player types found by Ferro et al. (2013) and Fullerton (2014).

These few decades, researchers have quite extensively conducted research on the motivation for play, and indisputably the classification for motivation for play by Yee (2006) has been used very widely in other past studies to understand players motivation in online games (Chen, Duh, Phuah, & Lam, 2006; Farltin, 2010; Hoffman &Nadelson 2009; Roiji, Schoemakers, Vermulst Eijenden, & Mheen, 2010; Young, 2009). Due to the theory is relatively new, there are minimal critiques by other psychologists on the three motivational factors.

Achievement motivation categorized into 3 subcomponents. Firstly, advancement which look into players progress, power, and status. This is solely looking into characters ability into making great progress by accumulating rewards and striving for power. Secondly, the subcomponent is Mechanic which players motivation are shown through the optimization of the game play. For instance, players managed to discover of all the game mechanics by being able to try out new things and a great analyzer of the game play. Lastly, one of the subcomponents is competition. Players are motivated by challenging others either teammates or opponents by provoking them or dominating the whole game play.

Moving on with the second factor analyses which is *Social* that is categorized into 3 subcategories which are *Socializing, Relationship*, and *Teamwork*. Firstly, players who are motivated by socializing usually they are able to initiate casual chats.

Other than they find it easy to make friends, they are also very helpful towards teammates. Furthermore, the second subcomponent is *Relationship*. Players are able to build and maintain relationship through the game play, they too are able to look for and give support to friends via games. Lastly, *Teamwork* is also one of the subcomponents which players show high collaboration in winning as they are a great team player as for them, it is all about the group achievements.

Finally, the last factor analyses are *Immersion* which fall into 4 subcomponents. The first subcomponent is, *Discovery* which players are motivated by exploring the game play and excited to find hidden things, usually this type of players will discover the game defects as they would venture into trying other things then what is fixed for the game play. Next, subcomponent is *Role-playing*. Story line or character history is what excites players as they are highly imaginative hence, they are motivated with the fantasy that is depicted in a game play. Furthermore, *Customization* is the third subcomponent which players are motivated by customizing their character. For instance, changing appearances through the clothes, accessories, color schemes and etc. Lastly, the final subcomponent is *Escapism* motivation. Players are motivated to play as they use the game a platform for them to withdraw from the real world including the problems in the real life. Otherwise, players are motivated by a means of relaxation platform. Figure 2.1 shows the theoretical framework for *Motivation for play* by Yee (2006).
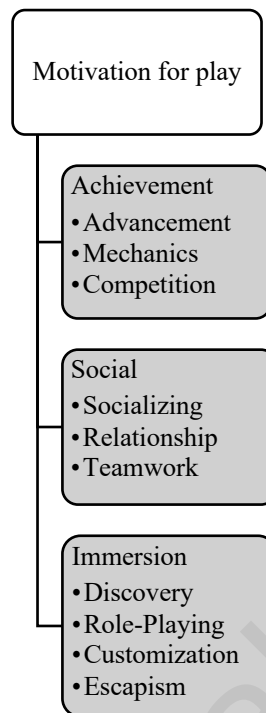
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┌─────────────────────┐
│  Motivation for play │
└─────────────────────┘
        │
        │   ┌─────────────────┐
        ├───│ Achievement     │
        │   │ • Advancement   │
        │   │ • Mechanics     │
        │   │ • Competition   │
        │   └─────────────────┘
        │
        │   ┌─────────────────┐
        ├───│ Social          │
        │   │ • Socializing   │
        │   │ • Relationship  │
        │   │ • Teamwork      │
        │   └─────────────────┘
        │
        │   ┌─────────────────┐
        └───│ Immersion       │
            │ • Discovery     │
            │ • Role-Playing  │
            │ • Customization │
            │ • Escapism      │
            └─────────────────┘
```

Figure 2.2: Motivation for play. Source: Yee (2006).

2.3 Conceptual Framework

To guide the objectives of the study, a conceptual work is upgrade and adapted from Mc Crae and Costa (1996) and Yee (2006). Based on Section 1.4 and 1.5, the conceptual framework has been developed (Figure 3.1). The framework has the characteristic of a relationship study of personality (independent variable) and motivation (dependent variable). Meanwhile, gender serve as control variable. The framework is used to study the relationships between personality traits of players playing PUBG and in-game motivation of players playing PUBG. Furthermore, gender differences serve as a control variable to measure players in-game motivation.
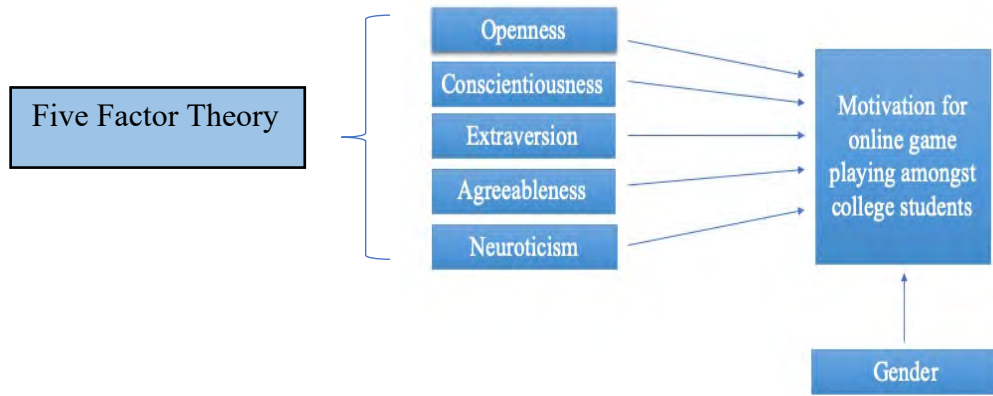
33

Figure 2.3: Conceptual Research Framework

2.4 Personality of gamers

As mentioned in Section 1.1, personality of gamers is a very crucial factor as it requires high sense of auditory and visual (Billieux, et al., 2013) and most importantly players personality is highly related with in-game behaviors (Graham & Gosling 2013). There is substantial amount of literature that examine the personality traits of gamers that help build better understanding on the topic. Past studies by Liang (2012) examined the personality traits of online games of 485 samples in which 66% are males and the group ranging from junior high schools to graduates. The samples are gathered through offline where data collected at universities and train station, and online platform through *BAHAMUT* website, the largest online game in Taiwan. Liang (2012) found that players are positively related with *Neuroticism, Openness, Extraversion* and *Conscientiousness* for online games, however *Agreeableness* was not found.

Formica, Gaiffi, Magnani, Mancini, Scatolini, and Ulivieri (2017) explored the relationship of mobile video games and personality traits of the millennial. This study was performed on 981 samples of 58% female. They split the sample into two, which

are casual gamers and hardcore gamers through their frequency of playing games. Casual gamers are identified as playing games monthly or weekly, whereby, hardcore gamers played daily, or several times a day. The results showed Openness was the highest personality trait followed with *Agreeableness, Conscientiousness, and Neuroticism*. This study found that *Extraversion* is the least trait that associates with gamers.

Kober and Neuper (2013) studied personality traits on 30 females with age range 18 to 33 years old. The researchers used *Big Five Factors Personality Traits* to measure the participants personality to find out which traits are most significant among the gamers. They found that *Conscientiousness* was the highest trait and followed with *Agreeableness, Openness, Extraversion*, and *Neuroticism*. However, the limitation of this study is the data are only gathered from females sampling. Therefore, it creates a room to explore the other possible findings involving males sampling.

Although previous study has female gender dominantly as participants, Jia, Xu, Karanam, and Voida (2016) studies have equal number of genders which examined the personality targeted gamification on gamers using the five-factor traits as measurement. The study was performed on 248 samples compromising of 52.8% females, and age range from 18 to 55 years old. They found that *Openness* was the highest trait followed with *Agreeableness, Conscientiousness, Neuroticism*, and *Extraversion*. They explained that players scored high on *Openness* tend to be very open with new experiences, whereas *Neuroticism* players are prone to stress. The limitation of this study is the wide range of age in which failed to explain the differences of the in-game personality of young adults to adults which may have an impact in playing online games (Charlton, Danforth, 2007).

Bauer, Brusso, and Orvis (2012) which personality trait of gamers most prevalent when handling difficulty when playing videogame. This study was performed on 139 students form southeastern university of which is 58% female. *The Big Five Traits* was used to measure the personality trait of gamers. Bauer, Brusso, and Orvis (2012) found that both *Openness* to Experience and *Neuroticism* interacted well with problem solving in video games and probably participants scored high on *Openness* are more creative in learning and solving any difficulties in game while Neuroticism shows participants are able to control their level of stress and anxiety while facing any difficulties in videogames. Moreover, *Conscientiousness* did not show any responds as to how they interact with difficulty in games and it is contrary with their hypothesis in which they expect to see significant reactions of participants who scored low on *Conscientiousness* would better adapt with difficulties in games. Thus, *Openness* and *Neuroticism* are the main traits in facing difficulties in games. However, Bauer, Brusso, and Orvis (2012) did not find *Conscientiousness* related with gamers, and this appear to have contradicting results as Liang (2012) and Kober and Nauper (2013) reported *Conscientiousness* is highly related with gamers.

On the other hand, the findings are similar with Andreassen et al. (2013) which also found there was no *Openness* and *Conscientiousness* amongst players and in fact it was negatively related. They studied the personality traits of gamers on 218 university students which 171 are females. Apparently, *Neuroticism, Extraversion*, and *Agreeableness* was positively related (Andreassen et al., 2013). However, this study was dominated by female participants, hence, further study could have balanced number of genders as sample in order to see the differences. Obviously, these show mixed findings as only *Conscientiousness* trait appeared to be similar with Bauer, Brusso, and Orvis (2012) and there is no Openness found unlike other studies that

showed it was highly related among the gamers (Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017; Liang, 2012; Kober & Nauper, 2013; Jia Xu, Karanam, & Voida, 2016).

Players personality will indirectly affect the game play as online game playing involves not only interest to play, but the need to showcase skills, expanding networking in online games and achieving the missions. Hence, players may spend substantial amount of playing. Peter and Malesky (2008) examined the personality trait of overly engaged players on MMORPGs. This study was performed on 196 participants and 173 were males. They found that *Neuroticism* and *Agreeableness* were positively related with players. *Neuroticism* players tend to avoid real life social interactions and find it easy or calm to foster the virtual relationships compared to real social situations. Furthermore, Peter and Malesky (2008) found that *Agreeableness* players tend to be quite under pressure when dealing with challenging situations, therefore they are very like a 'follower' when playing online games. On the other hand, *Extraversion* is the least trait found, this shows that players long for some collective social contact hence they may find comfort in building new 'online friends' than real-life friends. Apparently, there was no *Openness* reported. Similarly, this study found there is no *Openness* related with players personality (Andreassen, et al., 2013) and *Extraversion* is the least trait that associates with gamers (Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017).

It is apparent that all the findings reported shows inconsistency and mixed findings. It seems there is unclear patterns of which personality trait is prevalent amongst players. For instance, *Neuroticism, Openness, Extraversion and Conscientiousness* are found to be significantly affecting the game play (Liang, 2012; Jia, Xu, Karanam, & Voida, 2016; Kober & Neuper, 2013) *Openness* was the found

as the highest trait in gamers (Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017; Jia, Xu, Karanam & Voida, 2016) however in other studies *Openness* was not related with players personality (Andreassen, et al., 2013; Peter & Malesky, 2008). Furthermore, some studies found that *Extraversion* is the least trait that associates with gamers (Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017; Jia, Xu, Karanam, & Voida, 2016; Peter & Malesky, 2008). Kober and Neuper (2013) found that *Conscientiousness* was the highest trait to be associated with gamers, however there was no *Conscientiousness* found related with gamers (Andreassen, et al., 2013; Bauer, Brusso, & Orvis, 2012). *Agreeableness* found to be highly associated with personality of players (Andreassen, et al., 2013; Formica, Gaiffi, Magnani, Mancini, Scatolini, & Ulivieri, 2017; Jia Xu, Karanam, & Voida, 2016; Kober & Nauper, 2013; Peter & Malesky, 2008), however, Liang (2012) reported there was no *Agreeableness* found to be associated with personality of players. In short, the dynamic to inconsistency findings reported by past studies provide an interesting challenge for theories to explain. It is noticed that some discrepancies may be due to the size of sample and types of analyses used. Most importantly, it all differs due to different types of games that is being pioneered in the previous studies. Therefore, it raises the issue of what is the personality traits of players playing PUBG?

As mentioned in Section 1.1 most studies in Malaysia, so far are focusing on personality and life satisfaction of online game players (Chen et al., 2008), internet addiction (Cao & Su, 2007; Young, 1998) etc. However, there is yet a study on PUBG. Hence, this present study intended to explore the issue further and to understand which personality trait is most significant in players.

2.5 Motivation for online game-playing

As stated in Section 1.1, the evolving of online game mechanisms and social interaction flexibility would further enhance gamers' motivation (Kahn et al., 2015). Over the years, there are collective amount of works on motivation and gamers to help build better knowledge about the topic. Due to the various experiences available in online gaming, one's would have different motives and significant reasons to play games (Bartle, 2003; Billieux et al., 2013; Yee, 2006; Yee, 2002).

Yee (2006) examined players motivation in online gaming in order to understand how players differ from one another and how motivations of play relate with age, gender, and behavior. He conducted the study on 3000 players collected through online portals of *Massively Multiplayer Online Role-Playing Games* (MMOPRGs). Yee analyzed his data by using *Bartle's Player Types*. He discovered that there are too many similar traits between the player types hence through factor analysis he classified the traits into three main components which are *Achievement, Social*, and *Immersion* motivation. Finally, Yee (2006) found that male players scored high on *Achievement*, while female scored higher on *Social, Immersion*, and *Escapism*.

As mentioned in Section 1.3, majority of previous studies are focusing on Western countries and there are scarce data from Asian countries are limited. Players motivation may be varied according to their demographic simply because of different practices, values, and beliefs (Kwan, Nah, & Moon, 2010). For example, Šporčiç and Glavak – Tkalić (2018) performed a study on 509 participants from Croatia with average age of 23.14 years. They found that players are highly motivated by *Escapism* and least by *Social* while playing games.

Moving on to past studies in the East, for example in Taiwan, Lo, Lie and Li (2015) studied online game playing motivation and selection of online game characters. They recruited 375 participants comprising of 229 males and 113 females with average age of 23.75 years. This study adapted the three playing motivation components by Yee (2006) to measure the motivation of online gamers specifically to see the significant difference in the intention on selection of celebrity and non-celebrity characters with different playing motivation. They found that socially motivated players tend to choose celebrity characters while achievement and immersion motivated players do not show any corresponding respond over the selection of characters. The study highlighted *Social* driven players are drawn over the selection of characters and the *Customization* of characters.

Social driven players are found to be excited over *Customization* motivation, however Kirby, Jones, and Copello (2014) found that motivation for *Immersion* may lead to excessive play in online game. Researchers examined the motivation of players on 565 participants, in which 450 were male and average age was 24.6 year using *Motivations for Play* by Yee (2006). Kirby, Jones, and Copello (2014) found that immersive players who played due to the *Escapism* factor might have difficulties in engaging 'real-life' situations due to the escaping themselves from real world to virtual world. However, *Achievement* motivation was found not related and same goes to *Social* motivation which similar findings found by Lo, Lie, and Li (2014). The results were gathered based on 42% sample from United Kingdom therefore, as mentioned in Section 1.3 different geographic locations in which the gaming experience and plays are different may show differences (Kwan, Nah & Moon, 2010). On the other hand, Kirby, Jones, and Copello (2014) claimed that *Immersion* motivated players are likely to impact the outcome of the psychological wellbeing for instance, excessive play,

however, technically psychological outcomes may also influence this motivation which they failed to explain.

While immersive motivated players may lead to excessive play which may negatively impact their wellbeing, Yang & Liu (2017) found that *Achievement* and *Social* motivation was found to be positively related with implications of wellbeing. However, *Escapism* was not related with players motivation. Researchers investigated the motivations for playing Pokémon Go, online game was a huge phenomenon in game industry. The study was performed on 262 participants of 55% male in United States. The data gathered from *Amazon TurkPrime*, an online platform completing self-report survey. Nevertheless, due to the nature of the study of self-report survey which may generate social desirability bias in which people want to seem pleasing or good in a way hence, the results showed there was no *Escapism* motivation related while other studies found that *Escapism* is the highest predictor (Kirby, Jones, & Copello, 2014; Šporčiç & Glavak – Tkalić,2018).

Verhagen, Feldberg, Hooff, Meents, and Merikivi (2012) explored *Virtual World* characteristics shape users' motivation and found that apparently, *Escapism* motivation was the strongest in-game motivation among players. Researches defined *Virtual World* as multiple users instantaneously participate through their avatars in which mainly designed for the gaming communities. An online survey was used, and the data were collected from 846 users of *Virtual Worlds Second Life*. They found *Escapism* was the most important predictors to motivation. Meanwhile, visual attractiveness of the avatars was the dominant reason of why players are intrigued in customizing their avatar. The study highlighted that *Escapism* was the strongest motivational that positively related with *Customization* motivation.

So far, *Escapism* has been highlighted as one of the strongest motivational factors in choosing characters or avatars. Another past study on MMOPRGS, found that *Escapism* and *Achievement* motivation were the best predictors to motivation (Dauriat et al., 2011). They investigated motivations to play in MMORPGs of 696 participants in which 648 are males. This past study was dominant by male participants and apparently, *Social* motivation was the least motivation that associated with players. Hence, researchers suggest that further study to relook into *Social* motivation as this could potentially be one of the relevant predictors of addiction to MMORPGs.

On the other hand, Chang and Zhang (2008) reported the otherwise. For example, 347 participants which 58% were male and found that *Social* is one of the strongest motivations to play. Apart from that, researchers also found that entertainment, sociability, self-confidence and *Achievement* motivation were positively related to player's motivation in which are similar with Yee's motivation components. Moreover, people who play online games tend to be "materialist" who seek for intrinsic success and joy when they manage to defeat their challengers, or they feel sense of belonging when they play with their friends by playing the same games. The study highlighted that, players are highly motivated by *Social* and *Achievement* motivation and least on *Escapism* motivation which is found to be similar with previous study (Yang & Liu, 2017).

As mentioned in Section 1.1, MMORPGs game is one of the highest peaks in game industry. Fuster, Chamarro, Carbonell, and Vallerand (2014) study players motivation on 430 MMORPGs players which 410 players are male and found that *Achievement* motivation was highly related amongst players, however, *Social* motivation was weakly associated and *Discovery* motivation which is under *Immersion* motivation was not related with players. The study adopted Yee (2006).

The study appears to be similar with other past studies which Social motivation was the least (Dauriat et al.,2011; Kirby, Jones, & Capello, 2014) and there almost no *Immersion* motivation related with players (Yang & Liu, 2017).

Apparently, there is a tendency for people to cherish the simulation and live in the virtual world compared to real world. This means players who immersed themselves in the online game is highly related with *Escapism* motivation (Frosling-Henningsson, 2009). Young adults' motives in online gaming specifically referring to two types of games *Counter Strike* and *World War Craft* which both are MMORPGs type of games was studied on 23 online gamers in which 19 were male. Frosling-Henningsson (2009) found that communication is the most important key in online gaming and respondents further explained that communication in online gaming platform is fun and socially rewarding. Relationship was built on easily as compared to the real world whereby personal engagement and interest were the only factor to further the relationships. In addition, they found that online gaming environment allowed gamers to express themselves by not worrying of their physical appearances, age, and gender. Moreover, researchers also found that players found the experience of gaming allow them to be gratified emotionally whereby it is their profound interest as compared to real world activities like reading books or watching movies. Furthermore, some respondents assert that teamwork is really crucial in online gaming which could be achieved through *Social* aspect. On the other hand, the results found that *Escapism* is also one motives that highly drive the online gamers, some respondents said that online gaming allow them to temporarily escape from their personal life issues and find a precious break from anxieties in real life. Therefore, the study highlighted that players are motivated by *Achievement*, *Social*, and *Immersion*.

However, the sample used was dominant by male sampling which create a necessity to have a balance of both genders.

Players demographic will directly affect the in-game motivation (Kwon, Nah & Moon, 2010) and quite the opposite findings of Eastern studies for example, Wu, Lai, Yu, Lau, and Lei (2017) evaluated the Chinese version of the motives for online gaming on 300 sample. Researchers found that the greatest association between in-game motives of Chinese players were driven by *Social* motivation whereby they strive to build relationships via online game. In addition, they highlighted that social motive is one's important psychological needs and further explained social motive is contributing to more time spent in playing online games. Furthermore, this study discovered that Chinese players also scored high on *Competition* motivation which is similar with *Achievement* motivation however they scored low on *Immersion* specifically discovery motivation. Furthermore, results showed that Chinese players participant also reported high on escapism motivation which contradicting with other western studies that found no *Escapism* motivation (Yang & Liu, 2017).

As mentioned in Section 1.3, players in-game motivation is really a key factor that affect the game play. Yee (2006) reported that male players scored high on *Achievement*, while female scored higher on *Social*, *Immersion*, and *Escapism*. All three components of *Achievement*, *Social* and *Immersion* motivation are highly associated amongst players (Chang & Zhang, 2008; Wu, Lai, Yu, Lau, & Lei, 2017). Meanwhile, *Social* motivation is found to be the highest players motivation (Lo, Lie & Li, 2015; Yang & Liu, 2017). Contrary, with previous studies in which they found that that *Social* motivation is the least factor that drives players in online gaming (Dauriat, et al., 2011; Fuster, Chamarro, Carbonell, & Vallerand, 2014). Apparently, *Escapism* motivation was predicted as the highest motive amongst players (Dauriat, et

al., 2011; Verhagen, Feldberg, Hooff, Meents, & Merikivi, 2012). However, Yang and Liu (2017) figured that *Escapism* motivation was not related. Fuster, Chamarro, Carbonell, and Vallerand (2014) found that *Achievement* motivation was highly related amongst players, and *Discovery* motivation which is under *Immersion* motivation was not related with players. However, contradicting with a study by Frosling-Henningsson (2009) which found that *Achievement* motivation is not key factor that drives players.

In sum, although past findings are extensive, most studies are focusing on Western countries. As discussed in the literature, it has shown that various findings on motivation of players are evident. To sum up, Western studies found that players are highly motivated by *Escapism* (Dauriat et al., 2011; Frosling-Henninsgsson, 2009; Kirby, Jones, Capello, 2014; Verhagen, Feldberg, Hooff, Meents, & Merikivi, 2012) and *Achievement* (Dauriat et al., 2011; Fuster, Chamarro, Carbonell, & Vallerand, 2014; Yang & Liu, 2017), apparently there is no *Social* motivation found (Fuster, Chamarro, Carbonell, & Vallerand, 2014). As for Asian countries, *Social* motivation was the highest predictor for motivation gaming (Chang & Zhang, 2008; Lo, Lie, & Li, 2015; Rubijesmin, 2007; Wu, Lai, Yu, Lau, & Lei, 2017).

As mentioned in Section 1.3, most studies in Malaysia so far are focussing on internet addiction (Alam et al., 2014; Chong et al., 2015; Kapahi, Ling, Ramadass, & Abdullah, 2013) education-based games (Azli, Azan, & Bahri, 2008; Ibrahim & Jaafar, 2009; Hussain, Tan, & Idris, 2014). Talking about multi-player online gaming studies in Malaysia, there are several studies on MMORPG, for instance, on values in MMORPG (Rezaei & Ghodsi, 2014), as virtual grounds for second language learning (Adris & Yamat, 2015), as factors to increase customer loyalty to online games (Choi

& Kim, 2004) and as how online gamification enhance participation among novice students (Azmi, Lahad, & Ahmad, 2015). However, there is yet a study on PUBG. Therefore the present study will explore the motivation for play of PUBG players.

2.6 Gender differences in online games

As mentioned in Section 1.1, gender is also a vital factor in understanding players in-game motivation. Online gaming has become so universal that not only male players are prone to play, but also female players that significantly contribute to the revolutionized online game industry (Ko, Yen, Chen, Chen, & Yen, 2005). Several studies have aimed to investigate gender differences in motivation on online gaming.

Phenomenon of MMORPGs has allowed role-playing and other mechanics which breakthrough the mainstream of women and gaming (Graham & Gosling, 2013; Taylor, 2003; White, 2008). Taylor (2003) explored particularly female's motives in gaming as to what expect that made them a committed player. It is found that *Social* aspect is what drives female players the most, as they find it gratifying to be able to chat, to form a community over extensive conversation, and to be able to exchange ideas and generate new relationships. Female players do find team support and cooperation in MMORPGs is such an empowerment as they get to communicate to reach their goals. Furthermore, female players are able to adapt to the gaming nature with reasonable amount of time and thus develop essential game-skills which made them a better player, this results in highly consciences of awards and *Achievements*. Moreover, researcher also found that customizing avatars is also part of the games which queried prompt *Customization* to what is available in the nature of games. Female players may also find it enjoyable to surrender to their egos by creating avatars

that may or may not look like them in the real world, in example, beautiful, masculine, sexy and powerful identities. Thus, these acts as *Immersion* motivation that motivate them. Furthermore, researcher also explained that female players are found be tempted to be extra cautious in game therefore, they will only explore the nature of game when they feel safe of not getting killed by their opponents, unlike male players where they are excites to explore the nature soon, they begin the game, however, female players do find it treasurable to explore the game space.

Despite female players have been growing immensely, gaming industry should open up more space to allow them to play along with male players and such gaming nature which is often refer to 'unsafe' 'rustic' and 'unfriendly' spaces. Hence, this study elaborated female players are highly driven by Social motivation followed by *Achievement* motivation and little less on *Discovery* motivation. A similar study by Royse, Lee, Undrahbuyan, Hopson, and Consalvo (2007) found that female players are also highly motivated by *Social* motivation. Therefore, this raised a question, are female players only motivated by *Social*?

As stated in Section 1.3, while female players are most motivated by *Social* to play, male players are believed to be less on *Social* motivation. Bowman, Schultheiss and Schumann (2012) performed the study on 450 participants which 375 are males. They found that, male players are anti-social when they play games. Male players tend to be very focused in winning the game rather than connecting with other players unless it is necessary for discussion merely on as to how they win the game. However, Yee (2006) disagree as he said the there is a reason why male appear to look "anti-social".

As mentioned above, Yee (2006) examined the motivation for play and revealed that why male players are not "anti-social" but rather less social compared to females. Male scored higher in *Achievement* components compared to female players but stated that both genders are thrilled for *Achievement*. This study revealed that despite male players scored higher on *Achievement* motivation, but female players are as excited for winning the game. This is probably because, female players motivation is prone to socialize in game more than to set their motivation only on results basis. In fact, female players scored high on relationship components as compared with male players, which affirmed that male players are not as concern to socialize as compared to female players. Nevertheless, male players do socialize as much as female players do, however, probably with different aim and intentions. Probably there is significant reason as to why male players are not as socialize than female players.

Although, male players are not found to be anti-social, Jia, Xu, Karanam, and Voida (2016) found that males are emotionally stable which means they scored high on *Neuroticism* but less *Agreeableness* than females. There is a possibility that males engage in socializing in order to achieve their goals of completing missions, attaining rewards which is not overlooking to beyond games relationships. Thus, their emotions are practically more stable due to despair relationships. Despite, certain game play requires great communication, male players appear as not so engaging but they still achieve the game's mission and feeling satisfied.

Speaking of females who are mostly drawn to be *Social* while playing games, Poels, Cock, and Malliet (2012) expanded the findings. Researchers addressed the female players of MMORPGs and investigated how gender identity (GI) which indicating on person's masculinity or femininity was used to explain playing patterns within female group. Female's players motivations are bound to be associated with

their identification with male or female characteristics in which researchers described feminine is portrayed as more gentle and helpful towards other, while masculinity is depicted as competitive and independent. In short, they are being studied according to their innate characteristics. This study used online survey which builds on Yee's motivational scale on 466 females. They found that feminine scaled scored higher than the masculinity scales, which means females motivation in game is more likely to help one another in order to win the game. This means although they are positively related with *Achievement* motivation; it is evident that, *Social* motivation is also the crucial predictor for their *Achievement*. In addition, females who scored on masculinity was found to be related to the *social* motivation. Regardless different GI found in female players, *Social* motivation is still the highest predictor for their in-game motivation. Apparently, both femininity and masculinity were negatively related with *Immersion* motivation.

In sum, obviously there are significant gender differences in players motivation reported in past studies. For instance, Yee (2006) said that male is highly driven by *Achievement* motivation compared with female, although he said that both genders are meticulous when it comes to *Achievement* motivation though the results failed to prove. However, other studies discovered that female players can be as challenging and highly competitive and positively related with *Achievement* motivation (Taylor, 2003; Poels, Cock, & Malliet, 2012). On the other hand, both genders are found to be positively related with *Social* motivation (Poels, Cock, & Malliet, 2012; Royse, Lee, Undrahbuyan, Hopson, & Consalvo, 2007; Taylor, 2003). However, Yee (2006) asserted that male players scored lower on *Social* motivation, meanwhile, Bowman, Schultheiss and Schumann (2012) found male players tend to be anti-social in playing online game. Taylor (2003) found that female players get thrilled when they get to

customize their avatars and escape from their real-life issues, however, Poels, Cock, and Malliet (2012) exposed that female players was negatively related with *Immersion* and did not show as much interest in customizing avatars or intend to use games as a platform of *Escapism*. Speaking of studies in Malaysia, female players are found driven by entertainment and social factor and both genders are excited by the Achievement motivation (Latif, 2007) while Alzaharani, Mahmud, Ramayah, Alfarraj and Alalwan, (2017) found that both genders equally motivated by *Escapism*.

As mentioned in Section 1.3, most of the studies in Malaysia are focusing on gender and purchasing games (Fikry, Yusob, & Hussein, 2013; Fikri & Reeza, 2012), understanding students as gamers (Latif, 2007), education-based gaming (Ibrahim, Yusoff, Mohamed-Omar, Jaafar, 2011). However, there is yet any study on PUBG, hence, there is a need to explore the gender differences in players in-game motivation playing PUBG.

2.7 Personality and motivation for online gaming

As mentioned in Section 1.1 and Section 1.3 personality of players and in-game motivation are crucial aspects of the games which will affect the outcome of the game play overall. In recent years, there are limited literatures that examined personality of gamers and in-game motivation. Park, Song and Teng (2011) found that there are more than 70% of video game players in Korea played online games hence they believed that online games are worthy to be explored. Researchers studied the personality and motivation amongst Korean college students. Participants were assessed according to eleven genres of games (i.e: Sports, role playing, puzzles, strategy, simulation) they found that *Agreeableness* is highly related with motivation on *Achievement*,

Agreeableness and *Extraversion* is positively related with *Escapism* motivation. Researchers also found that personality of gamers did not seem to predict the preference of gaming genres. However, Graham and Gosling (2013) highlighted that specific game play does affect the results.

As mentioned above, the importance to have specific game used in study to measure players personality and motivation was because each game has their unique mechanisms which may affect the findings. For instance, *Mobile Legend* require players to focus on levelling up the games, or *World War Craft* require great teamwork to achieve mission. Graham and Gosling (2013) explored the personality and in-game of players of 1413 participants of which 166 are women. Researchers conducted the study specifically on the popular role playing game *World of Warcraft*. They found that players who are motivated to *Socialize* scored high on *Extraversion*. Meanwhile, players in-game motivation is *Immersion*, they scored high on *Openness*. Researchers also found that players who are motivationally competitive scored high on *Extraversion*, *Conscientiousness*, and *Openness* however, low on *Agreeableness* and *Neuroticism*. Moreover, they found that *Achievement* motivation is negatively related with *Conscientiousness*.

Jeng and Teng (2008) explored the personality and motivation of players. Researchers asserted that college players are the highest proportion of online game players hence the sample gathered 92 undergraduate students of Northern Taiwan University. Researchers were not focussing on any specific type of online games for the study. They found that *Openness* is positively related with *Discovery* motivation, *Conscientiousness* is positively related with *Escapism*, meanwhile, *Neuroticism* was shown negatively related with *Teamwork* motivation.

According to Kwon, Nah, and Moon (2010) although both countries are considered Asian but they do not carry the same practices and values. For instance, Korean are primitively collective and hierarchical compared to Taiwanese, hence the dissimilarity of findings reported. Referring to the points above, in Taiwan, Park, Song, and Teng (2011) found that *Agreeableness* and *Extraversion* was the highest trait related *Escapism* motivation. On the other hand, contrary findings in Korea, Jeng and Teng (2008) found that *Conscientiousness* the highest trait related with *Escapism* motivation. In addition, Jeng and Teng (2008) has a small sample (n=92) and participants were from various ages which may affect the results and failed to represent whole South Korea. Hence, there is no clear patterns of findings found in all the literatures. Hence, there is a need to understand this tentative issue and this present study is going to explore on what is the relationships between personality traits and in-game motivation of online gamers amongst college students in Selangor.

In sum, psychologist found that players with *Extraversion* is positively related with *Escapism* motivation (Park, Song & Teng, 2011), however Graham and Gosling (2013) said *Extraversion* players are highly related with *Social* and *Competitive* motivation. *Agreeableness* players are found to be positively related with *Escapism* motivation (Park, Song & Teng, 2011), but Graham and Gosling (2013) found that *Agreeableness* players scored low on *Competitive* motivation. Although past studies found *Conscientiousness* players are negatively related with *Achievement* motivation (Graham & Gosling, 2013), however *Conscientiousness* players are found to be highly related with *Escapism* motivation (Jeng & Teng 2008). Despite *Neuroticism* players are found to be competitively motivated (Graham & Gosling, 2013), Jeng and Teng (2008) found them to be negatively related with *Teamwork* motivation. Meanwhile *Openness* players are found to be positively related with *Immersion* motivation

(Graham & Gosling, 2013; Jeng & Teng, 2008). Therefore, the past studies found reported mixed findings. Furthermore, as mentioned in Section 1.3, majority of studies in Malaysia are focusing on personality and life satisfaction of online game players (Chen et al., 2008), internet addiction (Cao & Su, 2007; Young, 1998) while motivation studies focusing on internet addiction (Alam et al., 2014; Chong et al., 2015; Kapahi, Ling, Ramadass, & Abdullah, 2013) education-based games (Azli, Azan, & Bahri, 2008; Ibrahim & Jaafar, 2009; Hussain, Tan, & Idris, 2014). However, till date, there is yet a study on personality and motivation as variables on PUBG. Moreover, Graham and Gosling (2013) asserted that a specific game should be used in a future study to better understand players personality and motivation. As mentioned in Section 1.1, since, PUBG is a very popular and the biggest game stream currently and number of players has immensely grown (Rhee, Song & Kim, 2019), hence this present study is going to explore the PUBG players personality and motivation amongst college students in Klang Valley.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter describes the research approach used in the study to answer the research questions which are developed according to the problem statement, past studies, which was presented in previous chapters. It first explains the research design, sampling, the instrument, data collection techniques, and data analysis.

3.2 Research Design

Generally, research design means a structure to plan and execute a particular research (Punch, 1988). Research design is also a crucial part of the research as it includes important considerations; conceptual framework, participants, methodology and data analysis. The research design for the current study adopted a Quantitative method of cross-sectional study. Based on the Figure 3.3 Conceptual Framework, Descriptive analysis used to analyze Research question 1 and 2. Inferential analysis, specifically Independent Sample T test used to analyze Research question 3, and Pearson R correlation used to analyze Research question 4.

3.3 Procedure of the Study

Researcher has considered the ethical approach prior in conducting the study. Firstly, consent form for participants are prepared, and researcher has approached the participants manually. Participants are handed the informed consent and are advised

to acknowledge the informed consent prior to answering the survey (refer: Appendix). Participants will take approximately 20 to 30 minutes to complete the survey.

3.4 Sample of the Study

This study adopted Purposive sampling. The criteria of this purposive sampling are participants were selected according to the needs of the study; only PUBG players were approached. As asserted by Jeng and Teng (2008) college students comprise a high proportion of online game players, therefore the current study is only focusing on this particular group. The scope of the study is focusing on colleges around Klang Valley.

The sample size is (N=200) according to past studies the amount of sample is adequate for the type of research and objectives (Israel, 1992; Krejcie & Morgan,1970; Worthington & Whittaker, 2006). There were 100 males and 100 females participated. Participant's age is between 18 to 25 years old which is acceptable to be referred as standard age for undergraduate students (Hunter, Pitt, Croce, & Roche, 2014).

3.5 Instruments of the Study

This study employed a set of questionnaires which consists of three sections. Further elaborations on the questionnaire will be in 3.3.1, 3.3.2, and 3.3.3 respectively. The questionnaire was set in English language as this study is not aiming at any focus group of specific language but more of universally.

Section A of the questionnaire collected respondent's personal information such as gender, age, and if they play PUBG. Only respondents that play PUBG has been approached.

Section B is *Mini-International Personality Item Pool (IPIP) Scales* (Donellan, Oswald, Baird, & Lucas, 2006). This section has 20 questions of 5 Likert scale of 1= Very inaccurate, 2= Moderately inaccurate, 3=Neither inaccurate nor accurate, 4=Moderately accurate, 5=Very accurate.

Section C consists of 39 items measuring in-game motivation, which is, *Motivation for Playing Games* (Yee, 2006).

3.5.1 Section A: Background

This section collected respondents' personal details which is age, gender, and hours they spent playing PUBG.

3.5.2 Section B: Mini-IPIP Scales

To measure the personality traits of respondents Mini-IPIP Scales (Donellan, Oswald, Baird, & Lucas, 2006) which consists of 20 items was used. Past studies which compare several measures for *Big-Five Personality Traits* found that Mini-IPIP Scales has better validity than the other measures (Donellan, Oswald, Baird, & Lucas, 2006). Mini-IPIP Scales has 20 items of each trait would have 4 items. This items selection of answers is 5 Likert scale of 1= Very inaccurate, 2= Moderately inaccurate, 3=Neither inaccurate nor accurate, 4=Moderately accurate, 5=Very accurate. The alpha coefficients are E=0.82, A=0.75, C=0.75, N=0.70, and O=0.70 respectively (Donellan, Oswald, Baird, & Lucas, 2006). Table 3.1 list some examples of item for each trait.

Table 3.1

Personality traits and example of item

Personality Traits	Example of item
Extraversion	Am the life of the party
Agreeableness	Sympathize with other's feelings
Conscientiousness	Get chores done right away
Neuroticism	Have frequent mood swings
Openness	Have a vivid imagination

3.5.3 Section C: Motivation for play

To measure players motivation while playing PUBG, this study will adapt Yee (2006) game motivation questionnaires. There are 3 major components of motivation which are Achievement, Social and Immersion. There are 10 subcomponents which are *Advancement*, *Mechanics, Competition, Socializing, Relationship, Teamwork, Discovery, Role-Playing, Customization,* and *Escapism*. The questionnaire has 39 items of with 5 Likert scale ranging from "Not important" to "Very Important". For example, "How important for you to level up your character as fast as possible? The options ranges from 1 (*Not important*) to 5 (*Very important*). *Advancement* section has 6 items, *Mechanics* section has 4 items, *Competition section has 4 items, Socializing* section has 4 items, *Relationship* has 3 items, *Teamwork* sections has 4 items, *Discovery* section has 4 items, *Role-Playing* section has 4 items, *Customization* section has 3 items *and Escapism* section has 2 items. The alpha coefficients were 0.79, 0.68, 0.75, 0.74, 0.80, 0.71, 0.73, 0.87, 0.74, 0.65 for the dimensions of *Advancement, Mechanics, Competition, Socializing, Relationship, Teamwork, Discovery, Role-*

Playing, Customization and Escapism respectively (Yee, 2006). Table 3.2 shows the examples of the types of motivation.

Table 3.2

Three components of motivation for play

3 Components of motivation	Sub-categories of motivation	Example of item
Achievement	Advancement	How important for you to level up your character as fast as possible?
	Mechanics	How much do you enjoy being in serious loot/raid?
	Competition	How much do you enjoy competing with one and another?
Social	Socializing	How much do you enjoy chatting with others?
	Relationship	How often did you find having yourself have meaningful conversations with others?
	Teamwork	How much do you enjoy helping others?
Immersion	Discovery	How much do you enjoy collecting distinctive clothes or objects that have no functional value in the game?
	Role-Playing	How often do you role-play other characters?
	Customization	How much time do you spend in customizing your character during character creation?
	Escapism	How important it is to you that the game allows you to escape from the real world?

3.6 Data analysis

Data collected was analyzed according to descriptive statistics which is used to measure the mean, mode, and median of participants personality, and in game motivation. Inferential analysis was used to measure gender differences in in-game motivation. Specifically, Independent Sample T Test was used to determine gender differences in motivation in online games.

Finally, Correlation was used to measure the correlation between personality and motivation of players. Table 3.3 indicates the research questions and the appropriate analysis used.

Table 3.3

Data analysis

Research questions	Analysis
1. What is the personality trait of players playing PUBG?	Descriptive Analysis
2. What is the in-game motivation of players playing PUBG?	Descriptive analysis
3. Are there any gender differences in players motivation?	Inferential analysis (Independent Sample T Test)
4. What is the correlation between personality traits and online game-playing motivation?	Inferential analysis (Pearson correlation)

CHAPTER 4

FINDINGS

4.1 Introduction

This chapter presents the results based on research questions formulated. If first explains the descriptive analysis, inferential analysis and hypotheses testing.

4.2 Descriptive analysis

4.2.1 Normality Test

The normality test is used to determine whether a data set is well-modelled by a normal distribution or not, or to compute how likely an underlying random variable is to be normally distributed. The assumption of normality is a pre-requisite for most statistical tests. There are several ways to explore by graphically and statistically, one way to observe values of Skewness and Kurtosis. According to Peat and Barton (2005), if Skewness and Kurtosis values of variables are between -2 and +2, the data can be assumed normally distributed. Table 4.1 indicates Skewness and Kurtosis values of both Personality Traits and Motivation for play are within the limits of a normal distribution.

Table 4.1

Descriptive for Normality

Variables	N Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error	Z-Skewness	Z-Kurtosis	Normality
Extraversion	200	0.12	0.17	-0.58	0.34	0.73	-1.69	Yes
Agreeableness	200	-0.22	0.17	-0.29	0.34	-1.30	-0.86	Yes
Openness	200	0.21	0.17	-0.17	0.34	1.20	-0.50	Yes
Conscientiousness	200	0.20	0.17	-0.48	0.34	1.14	-1.39	Yes
Neuroticism	200	0.19	0.17	0.21	0.34	1.10	0.60	Yes
Socializing	200	-0.13	0.17	-0.11	0.34	-0.73	-0.32	Yes
Relationship	200	-0.19	0.17	-0.56	0.34	-1.13	-1.64	Yes
Teamwork	200	0.00	0.17	0.23	0.34	0.00	0.68	Yes
Roleplay	200	0.15	0.17	-0.35	0.34	0.88	-1.03	Yes
Customization	200	-0.11	0.17	-0.36	0.34	-0.65	-1.05	Yes
Escapism	200	-0.43	0.17	0.14	0.34	-2.52	0.42	No
Advancement	200	0.08	0.17	-0.53	0.34	0.47	-1.54	Yes
Mechanics	200	-0.10	0.17	-0.15	0.34	-0.58	-0.43	Yes
Competition	200	0.29	0.17	-0.32	0.34	1.69	-0.93	Yes
Discovery	200	0.14	0.17	-0.58	0.34	0.82	-1.71	Yes

Note: Z-Skewness = Skewness Statistic/ Skewness Std. Error

Z-Kurtosis = Kurtosis Statistic/ Kurtosis Std. Error

4.2.2 Distribution of respondents

It is important to obtain respondent's' demographic profile as it provides a background for the analysis that follows. 100 of the 200 respondents are male, accounting 50% of the total respondents and are female representing 50% of the total respondents. The questionnaire was well distributed among different genders. 42 (21%) of the respondents are between 18 to 20 years old, 53 (21%) of them are 21 to 23 years old, 105 (52.5%) of them from 24 to 25 years old. The majority respondents are between the ages 24 to 25 years. In terms of hours of playing in a week, 26% spend 1 to 6 hours, 24% spend 7 to 10 hours, and 50% spend 11 to 14 hours. The implication of the results will be discussed in Chapter 5. The demographic profile analysis for this study that shows the frequency distributions for all respondent is given in Table 4.2.

Table 4.2

Demographical of respondents

	Frequency	%	Mean
Age			
18 – 20 years	42	21	
21 – 23 years	53	26.5	23.15
24 – 25 years	105	52.5	
Hours of playing in a week			
1 - 6 hours	52	26	
7- 10 hours	48	24	9.51
11 - 14 hours	100	50	

4.2.3 Types of Personality Traits

As mentioned in Section 3.3.2 Mini-IPIP (Donellan, Oswald, Baird, & Lucas, 2006) is used to measure five personality traits of the respondents. Results indicated that personality traits of players are found highest in *Agreeableness* (82.5%), second highest is *Extraversion* trait (63%), meanwhile 48.5% respondents are found to be high in *Openness* and 47% of players are found to be high in *Conscientiousness*. 85% respondents are found to be low in *Neuroticism*. Mean analysis indicated that *Agreeableness* is the highest personality trait among the respondents (M=3.67), *Extraversion* trait is the second highest trait (M=3.47), *Openness* is the third highest (M=3.15), followed with *Conscientiousness* trait (M=3.11). *Neuroticism* trait is the least trait prevalent among respondents (M=2.61). In brief, all the results demonstrated that generally the gamers are friendly, warm, tolerant and emotionally stable. Further discussion will be described in the following chapter. Table 4.3 below shows the distribution of the five traits.

Table 4.3

Five personality traits of the respondents

Personality Traits	M	SD	N	%
Extraversion	3.47	0.74		
High			126	63
Low			74	37
Agreeableness	3.67	0.6		
High			165	82.5
Low			35	17.5
Openness	3.15	0.62		
High			97	48.5
Low			103	51.5
Conscientiousness	3.11	0.68		
High			94	47
Low			106	53
Neuroticism	2.61	0.57		
High			32	16
Low			168	85

Note: *M*=Mean; *SD*=Standard deviation

4.2.4 Types of In-game Motivation

As explained in the previous chapter, there are three major components of motivation which are Achievement, Social, and Immersion. Under these three major components there are another 10 sub-sections which are *Advancement, Mechanics, Competition, Socializing, Relationship, Teamwork, Discovery, Role-Playing, Customization,* and *Escapism*. The results show that the majority of respondents are found highest in *Escapism* (73.5%) second highest motivation is *Socializing* (58.5%) followed by 57.5% *Customization*. Meanwhile 55.5% are found to be high in *Mechanics* and *Teamwork* motivations. Mean analysis indicated that *Escapism* is the highest in-game motivation among the respondents (M=3.62), while the second highest is *Socializing* (M=3.3). Meanwhile, *Customization* is the third highest among

players (M=3.43). *Relationship* motivation is the least related with players (M=2.96). Based on the percentage, the highest three types of motivation for playing PUBG are high in *Escapism*, *Socializing*, and *Customization*. These results will be further discussed in Chapter 5. Frequencies are calculated and Table 4.4 below shows the in-game motivation distribution among the respondents.

Table 4.4

In-game Motivation of the respondents

Component	Sub Component	M	SD	N	%
Achievement	*Advancement*	3.25	0.8		
	High			110	55
	Low			90	45
	Mechanics	3.29	0.85		
	High			111	55.5
	Low			89	45.5
	Competition	3.19	0.72		
	High			101	55.5
	Low			99	49.5
Social	*Socializing*	3.3	0.78		
	High			117	58.5
	Low			83	41.5
	Relationship	2.96	1		
	High			87	43.5
	Low			113	56.5
	Teamwork	3.27	0.68		
	High			111	55.5
	Low			89	44.5
	Discovery	3.24	0.77		
	High			109	54.5
	Low			91	45.5
Immersion	*Roleplay*	3.24	0.83		
	High			105	52.5
	Low			95	47.5
	Customization	3.43	0.9		
	High			115	57.5
	Low			85	42.5
	Escapism	3.62	0.79		

Table 4.4 (continued)
In-game Motivation of the respondents

Component	Sub Component	M	SD	N	%
	High			147	73.5
	Low			53	26.5

Note: *M*=Mean; *SD*=Standard deviation

4.3 Inferential Analysis

4.3.1: Gender Differences in In-game motivation

In order to test gender differences in online-game motivation, Independent Sample T Test is used. This analysis is utilized to compare means of two independent groups in order to determine whether there is statistical evidence that the associated gender means are significantly different in in-game motivation. The results indicated that there is a significant gender differences in in-game motivation. Males are found to be higher than females in four in-game motivation. The first significant difference is *Advancement* motivation t (198) = 2.4, p = 0.02. The results indicated that males are higher (M=3.39, SD=0.8) compared to females (M=3.12, SD=0.8) in *Advancement.* There was a significant difference in the scores of *Mechanics* motivation t (198) = 3.4, p = 0.00. The results indicated that males are higher (M=3.49, SD=0.83) compared to females (M=3.1, SD=0.82) in *Mechanics*. Meanwhile there was significant difference in the score of *Discovery* motivation t (198) = 4.53, p = 0.00. The results indicated that males are higher (M=3.48, SD=0.69) compared to females (M=3.01, SD=0.78) in *Discovery.* There is significant difference in the score of *Customization* motivation t (198) = 2.84, p = 0.01. The results indicated that males are higher (M=3.4, SD=0.97) compared to females (M=3.25, SD=0.8) in *Customization.* In brief, in-game motivation of male respondents are higher than females in. Further discussion will be discussed in Chapter 5. Table 4.5 shows the Independent Sample T Test results.

Table 4.5

T test analysis of in-game motivation based on gender

	Gender								95% Confidence Interval of the Difference	
	Male			Female						
Subdomain	M	SD	df	M	SD	df	t	Sig.	Lower	Upper
Advancement	3.39	0.8	198	3.12	0.8	197.86	2.42	0.02*	-0.49	-0.05
Mechanics	3.49	0.83	198	3.1	0.82	198	-3.4	0.00**	-0.63	-0.17
Competition	3.26	0.79	198	3.12	0.63	187.98	1.46	0.15	-0.35	0.05
Socializing	3.39	0.84	198	3.21	0.7	191.83	1.59	0.11	-0.39	0.04
Relationship	2.88	1.13	198	3.04	0.85	183.58	1.18	0.24	-0.11	0.45
Teamwork	3.24	0.71	198	3.31	0.64	195.72	0.7	0.48	-0.12	0.26
Discovery	3.48	0.69	198	3.01	0.78	195.4	4.53	0.00**	-0.67	-0.27
Roleplay	3.34	0.89	198	3.14	0.75	192.27	1.74	0.08	-0.43	0.03
Customization	3.6	0.97	198	3.25	0.8	190.45	2.84	0.01*	-0.6	-0.11
Escapism	3.62	0.75	198	3.62	0.83	196.2	0.03	0.98	-0.22	0.22

Significant at the level 0.05 *p<0.05,
Significant at the level 0.01 **p<0.01

4.3.2: Correlation between Personality Traits and In-game Motivation

Based on table 4.1, most data are normal except for *escapism* that shows nonnormality. However, since this study has big sample (N=200) hence the data is assumed normal (Akoglu, 2018). Pearson correlation is utilized to see if there is a linear relationship between personality traits and in-game motivation of players. Hypotheses Ho2 and Ha2 represented by stating that one score affects the other in a certain way. The correlation is affected by the size and sign of the (r). Pearson's correlation coefficients (r) can take on values -1 to +1, and the sign out of the front indicates the directions, i.e. positive correlation and negative correlation (Pallant, 2007). Cohen (1998) suggests the following guidelines to determine the strength of the relationship.

r= .10 to .29   or   -.10 to -.29 small

r= .30 to .49   or   -.30 to -.49 medium

r= .50 to 1.0   or   -.50 to -1.0 large

Table 4.6 shows that some constructs are positively correlated. *Advancement* was significantly correlated with *Extraversion* r = 0.4, p = 0. *Competition* was significantly correlated with *Conscientiousness* r = 0.3, p = 0.3. Lastly, *Teamwork* was significantly correlated with *Agreeableness* r = 0.3, p = 0.3. Meanwhile, the rest of the relationships between the two variables are found weak. Further discussion will be in Chapter 5.

Table 4.6

Pearson Correlation

		Extraversion	Agreeableness	Openness	Conscientiousness	Neuroticism
Advancement	R	.356**	.140*	0.004	0.063	-0.087
	Sig.	0	0.049	0.957	0.374	0.219
Mechanics	R	.200**	0.065	0.04	0.026	0.131
	Sig.	0.004	0.359	0.578	0.716	0.065
Competition	R	0.121	0.021	.193**	.293**	0.027
	Sig.	0.087	0.767	0.006	0	0.706
Socializing	R	.149*	0.054	0.033	0.016	0.062
	Sig.	0.035	0.449	0.647	0.82	0.385
Relationship	R	0.044	0.014	0.038	-0.064	0.096
	Sig.	0.532	0.844	0.597	0.385	0.177
Teamwork	R	0.1	.289**	.153*	0.081	0.005
	Sig.	0.158	0	0.031	0.252	0.941
Discovery	R	0.094	.164*	0.017	-0.031	0.093
	Sig.	0.187	0.021	0.81	0.668	0.193
Role play	R	.207**	0.014	0.032	0.071	-0.021
	Sig.	0.003	0.849	0.655	0.321	0.763
Customization	R	0.1	-0.022	.155*	0.136	0.059
	Sig.	0.159	0.762	0.028	0.055	0.405
Escapism	R	.234**	0.124	-0.012	0.002	-0.133
	Sig.	0.001	0.081	0.868	0.979	0.061

Correlation is significant at the 0.05 level (2-tailed).*

Correlation is significant at the 0.01 level (2-tailed).**

4.4 Hypothesis testing

Hypothesis testing was conducted. Ha1 was tested by using Independent Sample T Test. As for Advancement motivation based on 95% level of confidence which shows (lower 95% CI = -.49, upper 95% CI = -.05), Mechanics motivation (lower 95% CI = -.63, upper 95% CI = -.17, Discovery motivation (lower 95% CI = -.67, upper 95% CI = -.27) and Customization motivation (lower 95% CI = -.06, upper 95% CI = -.11) is significantly at p < .5 two tailed. In general, the results provided support to the hypothesis of this study. Pearson correlation used to describe the direction of the relationship between independent and dependent variables (Pallant, 2001). Results indicates there is significance difference as p < 0.05. Table 4.7 shows the summary of results of hypothesis testing.

Table 4.7

Summary of results of hypothesis testing

Hypothesis	Results
Ho1: There is no significant of gender differences in in-game motivation.	Not supported
Ha1: There is significant gender differences in in-game motivation	Supported
Ho2: There is no significant relationship between personality traits and online game playing motivation	Not supported
Ha2: There is significant relationship between personality traits and online game playing motivations.	Supported

4.5 Summary

In sum, important results obtained in the study were, majority of the respondents are high in *Agreeableness* personality trait. Meanwhile, majority of the respondents are high in *Social* and *Immersion* motivation. There are significant gender differences in online game playing motivation of which males were higher than females in *Advancement*, *Mechanics*, *Discovery*, and *Customization*. Lastly, there is significant moderate relationship between personality traits and in-game motivation of which moderately between *Advancement* and *Extraversion, Competition* and *Conscientiousness,* and *Teamwork* and *Agreeableness.* Next chapter will discuss the results and its implication.

CHAPTER 5

DISCUSSION

5.1 Introduction

The present chapter will discuss the findings and followed by implication of results. The chapter will conclude with suggestions for future research.

5.2 Summary of Findings

The present study attempts to identify what is the personality trait of players playing PUBG, their in in-game motivation and to distinguish gender differences in playing PUBG. Lastly, the current study tried to identify the relationships between personality trait and in-game motivation of players. Two hundred undergraduates around Klang Valley of voluntarily responded to the questionnaires.

The descriptive analysis of personality traits found that *Agreeableness* trait was the highest level of personality trait among gamers followed with *Extraversion* trait. On the other hand, gamers are found to be low in *Neuroticism*. Although this study found that hours spent in a week playing PUBG is considered high and may lead to addiction as past study suggested (Alam, et al.,2014; Braun, Stopfer, Müller, Beutal & Egloff, 2016; Tang & Fox, 2016) however their *Neuroticism* is still low and least associated with the gamers personality traits. This suggests that players are calm and emotionally stable. The results also indicated players is profoundly motivated by *Social* and *Immersion* motivation. However, gamers least motivated by *Relationship* motivation to play.

Gender differences analysis in in-game motivation shows that male gamers scored higher in *Advancement*, *Mechanics*, *Discovery* and *Customization*. On the other hand, no significant gender differences in other subdomains of in-game motivation.

Finally, the results revealed that there is a significant positive correlation between personality traits and in-game motivation is *Extraversion* and *Advancement*, *Conscientiousness* and *Competition*, *Agreeableness* and *Teamwork*. On the other hand, there is no significant correlation between the traits and other sub domains of motivation.

5.3 Discussion

5.3.1 Personality Traits of Players

As explained in Section 1.1, personality traits of gamers are a crucial factor in understanding the nature and in game behaviors of players in online games (Graham & Gosling, 2013; Shih-Ping & Ching-I, 2008). The results of the current study have shown that the most prevalent trait is *Agreeableness* which is in line with past findings (Kober & Nauper, 2013; Park, Song, & Teng, 2011; Schimitt, Allik, Mccrae & Benet-Martinez, 2007). This is due to the concept of PUBG which need individuals to team up in a group and work towards their mission and attaining their victory or famously knows as '*Winner Winner Chicken Dinner'*. In addition, due to the voice chat system which allow players to discuss easily and when players work or move in a team, one of the crucial aspects is to be able to work cooperatively. This particular trait is crucial especially it needs the players to plan their movements strategically. Theoretically, the sub-traits of *Agreeableness* are trust, morally, altruism, modesty, sympathy, and cooperation. Therefore, it is not surprising that the respondents of the present study are

high in *Agreeableness* as they shown great social interaction by using the voice chat system or chats command to communicate effectively. They need to have all the characteristics of *Agreeableness* to win their game.

The results also indicated that *Extraversion* is the second highest trait prevalent among PUBG players. This finding is also aligned with some past studies (Andreassen, et al., 2003; Ferro, 2018; Jin, Xu, Karanam & Voida, 2016; Park, Song, & Teng, 2011). *Extraversion* players are found to be highly involved in the game and at times tend to dominate the game play. Due to the enabling of the voice chat, the players are able to communicate effortlessly with the teammates. This trait is crucial particularly for the players to execute their movements strategically. Based on FFM theory *Extraversion* depicts friendliness, active, assertive, and sociability. Therefore, the respondents of the present study are high in *Extraversion* which determine that they enjoy virtual socialization and actively showing ther leadership skills by using the command chat system (e.g.: Team, Assemble! / Gather around now). Doubtless they need all the essential characteristics to master the game.

It should be noted that some researchers found contradictory results. In other words, Ulivieri (2017) found that *Extraversion* is least related. Some studies found that it is negatively related with gamers (Bianchi & Phillips, 2005; Peter & Malesky, 2008). This is probably that Asia community are found to be high in *Extraversion* (Muhamad & Jaafar, 2009; Li, Lan, & Ju, 2015; Ong, et al., 2011).

Finally, the results indicated that the respondents scored low in *Neuroticism.* As described in Section 1.1 and 1.3, Kajonius (2017) also discovered similar patterns

of low *Neuroticism* in gamers. According to FFM theory, psychologically low in *Neuroticism* appeared to be very emotionally stable, calm and optimistic. Respectively, the result highlight to us that the gamers are level-headed and confident. Therefore, it is not a surprise that the PUBG gamers tend to do well in leadership roles and enjoy socializing. Notably, Asian community is typically low in *Neuroticism* trait (Kojonius & Giolla, 2017; Schotanus-Dijkstra, et al., 2015).

5.3.2 In-game Motivation of Players

As mentioned in Section 1.1, the concept of online gaming allows players to expose to variety of experiences and ultimately have significant reasons to play games (Bartle, 2003; Billieux et al., 2013; Yee, 2006; Yee, 2002). The present study found that highest in-game motivation in gamers is *Escapism* which is in line with past studies (for eg; Billeux et al., 2013; Dauriat et al., 2011; Demetrovics et al.,2011; Yee 2006). This suggests that respondents of the present study are highly motivated by *Escapism* reflected playing PUBG as a source of a withdrawal from the reality. Distinctively, the theory demonstrated that *Escapism* players are relax and they play games as a way to escape from the real life. In connection to theory, probably the undergraduates are more likely to divert their stress by playing PUBG in their own time. These have been demonstrated by past studies on online games (Andreassen, et al., 2013; Nagle, Wolf, & Riener, 2016). In other words, the game offers them to fulfill and allow them to escape from the reality. However, Yang and Liu (2017) which studied the popular online game *Pokémon-Go* found that *Escapism* motivation was not related with players motivation. However, the game nature of *Pokémon-go* is only played individually while PUBG allows teaming up, hence the differences in findings. Therefore, it is not a surprise the respondents of the present study scored high in

Escapism as it probably due to the surroundings that act as the factor to their motivation to play PUBG. For example, Wu, Lai, Yu, Lau, and Lei (2017) found that gamers with high desire to escape from real-life problems via online gaming allow them to obtain peace and build new identity. Therefore, *Escapism* is the certain predictor to online gaming addiction. Hence, this explains the present respondents are considered addicted to PUBG with primary motive of *Escapism.*

The results of this study also indicated that second highest in-game motivation is *Socializing*. Similarly, past studies found this as the highest trait related with players (Chang & Zhang, 2008; Wu, Lai, Yu, Lau, & Lei, 2017). Specifically, the study indicate that players are highly intrigue to connect and socialize while attaining their mission. As mentioned in Section 1.1 and 1.3, the concept of MOBA where players are real, and most players are new to each other and it was not odd that they are able to communicate to each other. Based on Motivation for Play theory that players are motivated to *Socialize* to attain their mission (Yee, 2006) and some studies revealed that gamers *Socialize* and at the same time sustain the *Relationship* (Chang & Zhang, 2008, Lo, Lie, & Li, 2015). Shockingly, the present study found that the respondents *Relationship* motivation is low. This is probably the respondents only *Socialize* in order win their game. Theoretically the sub trait of *Socialize* is making casual chat and helping friends. It is important to be able to chat and help team players in order to win the game. Therefore, it is important to be *Socialize*. The result also indicate that the respondents of the current study also motivated by *Teamwork*. Hence, one can understand that, probably the respondents are excited to *Socialize* make new friends by expanding their team players and by great *Teamwork* that they have in order to win their game strategically.

The results also indicated that *Customization* is the third factor of in-game motivation. This result is parallel with past studies which also found that players are fascinated to customize their avatars based on their preferences (Kirby, Jones, & Capello, 2014). According to the theory the behaviors of *Customization* are intrigued players incline to customize their appearances, accessories, avatar styles and color schemes. Therefore, it is likely that the respondents are motivated by *Customization* as the game context have 5 facial selections for each gender and over 100 selections for outfits, not only that, affordable players willing to go extra mile by purchasing UC (i.e: coins to unlock) and make a purchase of their desired outfits. In other words, players determine to spend their money in order to customize their avatar in which PUBG has made over close to \$1 billion revenue in 2018 which Asia has contributed 53% to it (2019, April 23). Hence, there is no doubt that players are highly motivated by *Customization*.

5.3.3 In-game Motivation Based on Gender Differences

As mentioned in Section 1.1, it is mentioned that gender is one of the important aspects to measure players motivation (Brown, Hall, & Holtzer, 1997). This study has found that there are significant differences in in-game motivation based on gender in playing PUBG. This result indicated that there are positive significant differences in *Advancemen*t, *Mechanics*, *Discovery* and *Customization*. These motivations are all scored higher by male gamers. It is expected that male gamers to score higher on *Achievement* motivation, in which they do in *Advancement* and *Mechanics* which is in line with past studies (Latif, 2007; Yee, 2006). Apparently, male do enjoy the process of discovering the game context and customizing their outfit more than female gamers. However, Royse, Lee, Undrahbuyan, Hopson, and Consalvo (2007) indicated that

female players score more on *Discovery*. This result highlight that the male gamers are more intrigued in exploration than female gamers do.

However, there are no gender differences found in *Social* motivation. Although past studies have indicated that female gamers scored more on Socializing motivation (Graham & Gosling, 2013; White, 2008; Yee, 2006). This result suggests that there are no differences in *Social* motivation and female gamers are not merely motivated by *Social*. In fact, there are both meticulous when it comes to *Competition*. In addition, Yee (2006) claimed that there is a reason why female gamers dominate the *Socializing* motivation and male gamers tend to be 'anti-social' was due to female gamers are found to be highly motivated by *Relationship* too. In fact, based on the result in this study, *Relationship* motivation was least associated with players. Hence, it is clear that, female gamers are not the certain group to be driven by social, as they too are meticulous when it comes to *Achievement* which is parallel with past studies (Yee, 2006).

Therefore, the hypothesis null; Ho1 of there is no significant gender differences in-game motivation is rejected and Ha1 is accepted.

5.3.4 Relationships between Personality and in-game Motivation

As described in Section 1.1 and 1.3, past researchers have found that *Extraversion* is positively related with *Escapism* motivation (Park, Song & Teng, 2011), however Graham and Gosling (2013) said *Extraversion* players are highly related with *Social* and *Competitive* motivation. *Agreeableness* players are found to be positively related with *Escapism* motivation (Park, Song & Teng, 2011), but Graham and Gosling (2013) found that *Agreeableness* players scored low on *Competitive*

motivation. Although past studies found *Conscientiousness* players are negatively related with *Achievement* motivation (Graham & Gosling, 2013), however *Conscientiousness* players are found to be highly related with *Escapism* motivation (Jeng & Teng 2008).

It has been prominent that past studies have reported inconsistent findings. Comparably, the present study has found that *Agreeableness* is positively related with *Teamwork.* As mentioned in Section 2.2.1, the interesting traits of *Agreeableness* is likely to avoid conflicts and any uncomfortable situation which depreciate harmony. Meanwhile, *Teamwork* motivated players are prone to great collaboration with teammates. Therefore, the correlation between *Agreeableness* and *Teamwork* is relevant as it is important to be able to avoid conflict and likely to demonstrate great consideration in order to collaborate effectively and win their game.

On the other hand, the results of the study also found that there are significant relationships between *Extraversion* and *Advancement.* Jeng and Teng (2008) affirmed that *Extraversion* players are very engaging and determine in winning the game play. Meanwhile, Fuster, Chamarro, Carbonell, and Vallerand (2014) found that players are highly motivated in *Achievement.* The interesting traits of *Extraversion* is great on the social environment as well as succeeding at work environment too. Meanwhile, *Advancement* players are motivated by success, status and power. Therefore, it is really crucial for the players to enjoy at excelling to be motivated by *Advancement* and attain their goal of accomplishment in the game play.

Past researchers have found that *Conscientiousness* players tend to be persistent to get ahead the game (Conrad, 2006; Noftle & Robins, 2007; Poropat, 2009). The current study reported on the positive correlation between *Conscientiousness* and *Competition.* Although, Graham and Gosling (2013) found no correlation between these personality trait and motivation, however the current study found otherwise. This is probably due to *Conscientiousness* players are determine for success and *Competition* motivation is all about being competitive to win. In fact, it is important for the players to be persistent and indomitable in order to be competitive in game. Therefore, it is not a surprise that *Conscientiousness* correlates positively with *Competition*.

Evidently, this current study highlighted that the significant relationships between *Agreeableness* and *Teamwork* tells us that players who appreciate agreement and considerate are prone to demonstrate commendable cooperation in the team in order to strategically win the game. On the other hand, the positive correlation between *Extraversion* and *Advancement* shows that players are socially comfortable in playing PUBG and at the same time highly motivated in the success of winning the game. Furthermore, the relation between *Conscientiousness* and *Competition* ascertain that PUBG players are very determine in winning the game hence they are highly motivated to be competitive among their teammates so they could be the 1st player with more scores, or simply by winning the title *'Winner Winner Chicken Dinner'.*

Surprisingly, *Neuroticism* trait players was not related at all with any in-game motivation. This is probably due to *Neuroticism* trait is the least associated among the

players. As explained in Section 5.3.1, Asia community is typically found low in *Neuroticism* (Kojonius & Giolla, 2017; Schotanus-Dijkstra, et al., 2015).

Hence, hypothesis null; Ho2 there is no significant relationship between personality traits and online game playing motivation is rejected and Ha2 is accepted.

5.4 Implication of Study

The present study attempts to understand the personality traits of the PUBG gamers and types of online motivation which driven them to play the games. As mentioned in Section 1.3, previous studies on PUBG are quite scarce as PUBG is comparatively new and there is also a clear inconsistency in past findings in these issues. As reviewed in Section 2.4, researchers emphasized that players' personality traits are highly significant in affecting their game. Countless past studies have shown that there are differences in personality traits between East and West. Specifically, players are found to be high in *Extraversion* in the Western countries, whereas in the East, high in *Agreeableness.* According to Kuss (2013), cultural context is significant as it embeds the gamer in a community with shared beliefs and practices, thus giving their gaming experiences with meaning. The significance of these shared beliefs and practices in influencing many aspects of human behavior have been acknowledged previously in studies as cross-cultural psychology. In other words, psychologists have agreed on how indigenous cultural values affect human behavior. For example, in the East, the culture-specific values such as filial piety in a Chinese communities (Loo See & Jee Yoong, 2013), *zen* in Japanese (Kato, 2015; Suzuki, 2019), and *adat* and *budi* in Malay society (Collins & Bahar, 2000; Hashim, 2006) have been reported to be essential in determining personality. The essence of cultural factors which mirrored in the

personality of the Eastern communities is also evident in the Malaysians. As mentioned in Section 5.3.1 Malaysians are found to be high in *Agreeableness* and not surprisingly the traits are also reflected in all context, including gaming. As mentioned in Section 2.2.1, theoretically the current study affirmed Mc Crae and Costa (1999) notion that there is significant difference in the degree and magnitude of personality traits between the East and the West; and one of the current debates on this issue is how cultural factors shape these differences. The current study apparently has validated the fact that being one of the collectivistic Eastern communities, the Malaysians are high in *Agreeableness*, including in gaming environment.

The present study also highlighted cultural values affects motivation of gamers in playing games. Looking at Western studies, majority of psychologists found that gamers are motivated by *Escapism* (Dauriat et al., 2011; Frostling-Henningsson, 2009; Kirby, Jones, Capello, 2014) while majority of Eastern studies, found that gamers are motivated by *Social* (Chang & Zhang, 2008; Rubijesmin, 2007; Wu, Lai, Yu, Lau, & Lei, 2017). As explained in Section 5.3.3 it is noticeable that past findings showed dissimilarity of in-game motivation of players. Interestingly, the current study discovered a new pattern of in-game motivation of gamers that is, they are highly motivated by *Escapism.* The theoretical implication of this study is the result has shed light that cultural values are not strong enough in determining and affecting the in-game motivation. This particular result is in contrast with the first result. There is possibility that most respondents are residing in a metropolitan city which might consequently possessing both individualistic and collectivistic values. Nevertheless, this finding is worth to be investigated further in future.

One of the major findings in the current study is interestingly, no gender differences were found in *Achievement* and *Social* online game motivations. As discussed in 5.3.4, these results are totally in contrast with past findings which demonstrated male gamers are more motivated by *Achievement* in playing games (Bowman, Schultheiss & Schumann, 2012; Chang, Wong, Yap & Yap, 2016; Liu, 2016) whereas female gamers usually dominate the *Social* motivation (Royse, Lee, Undrahbuyan, Hopson, & Consalvo, 2007; Poels, Cock, Malliet, 2012; Yee, 2006). Clearly, the typical pattern of gender differences in online gaming motivation is absent in the present study. Thus, it is quite challenging to investigate this issue further in the future, perhaps with a bigger sample.

One of the major objectives of the current study is to understand the relationships between personality and in-game motivation of gamers. It appears that the studies between these two variables are relatively new, it seems there is no apparent pattern in explaining the relationship between personality traits and in-game motivation of gamers. Secondly, looking at studies in Malaysia, the present study is the only attempt available today. Hopefully there will be more studies in the future which will be focusing on these issues. It is apparently quite challenging to understand how these two variables link to the body of knowledge since research on PUBG is reasonably new in Malaysia, as mentioned in Section 5.3.5, there are significant relationships between the two variables. Hence, this attempts in understanding the variables has provided new idea that worth investigating in the future. In conclusion, the current findings of the issue initiate the idea of there are significant relationships between personality and in-game motivation based on local context which demands for more studies in the future.

5.5 Limitations and Suggestions for Future Research

There are some suggestions that can be offered for future research. Firstly, the sampling of the present study is limited to only young adults in Klang Valley, thus in the future respondents should come from other parts of Malaysia. This is important as it will represent the whole population of PUBG gamers in Malaysia. Therefore, hopefully the results will increase the validity and reliability as well as robust analyses can be conducted. Similarly, apart from focusing on young adults, future research should extend the age range to other groups of age as well.

The current study has adopted quantitative approach in understanding the issues presented. Based on these measures used in the current study, there are few recommendations of measures that can be considered in the future. First of all, to understand the issues in-depth, interview must be included. This will allow a profound perspective shared by the participants. For example, detailed information about the participants personal feelings, perceptions and opinions about the issues may be gathered (Opdenakker & Raymond, 2006). In fact, interview usually achieve a high response rate. Furthermore, longitudinal study is also effective in determining variable patters over time which ensure clear focus and increase the validity of studies (Grossmann, Grossmann, & Waters, 2007). On the other hand, the data collected over significant time are as satisfying as empirical results in understanding the issues and enhance greater perspectives on the patters; simultaneously the reliability of the measures is sustained.

It is noteworthy that the current study is an initial attempt in understanding the relationships between personality and in-game motivation of players especially in

local context. As mentioned in the Implication of Study, it is quite challenging in discussing the issues due to no apparent patterns. Therefore, it is crucial for the future studies to address the issues in order to see the shapes of the relationships between personality and in-game motivation.

5.6 Conclusions

The objectives of the present study attempt to understand personality of players, the in-game motivation of players, gender differences in online games motivation, and the relationships between personality and in-game motivation of players.

Personality traits have been numerously said to be associated with players in playing games. Ferro, Waltz, and Greuter (2013) found that personality traits of players act as an important factor as they will demonstrate their persona and influence the gaming environment. As mentioned in Section 1.3, past studies reported that personality of players are contradicting especially West found that their players are high in *Extraversion* (Ferro, 2018) while East are high in *Agreeableness* (Ching-I, 2008). The present study affirms that cultural factor is a strong predictor to personality of players. As mentioned in Section 5.3.1, players are found high in *Agreeableness.* It reveals that the fact of collectivistic of Eastern communities are highly depicted in Malaysian people where they are well-known high in *Agreeableness.*

Referring to in-game motivation of players, this present study has found that culture is not a factor in influencing players motivation. As mentioned in Section 1.3, West studies found that players are highly motivated by *Escapism* (Šporčić & Glavak-Tkalik, 2018) while past findings on East studies found that players are highly

motivated by *Social* (Yang & Liu, 2017). Based on the current findings of the study, players are found to be high in *Escapism.* This affirms that cultural is not an issue in defining online games motivation of players.

Next predicament discussed in this present study is, the gender differences in in-game motivation. As mentioned in Section 1.3, *Achievement* motives are strongly associated with male gamers (Liu, 2016). On the other hand, female gamers are highly influenced by *Social* motives (Royse, Lee, Undahbuyan, Hopson, & Consalvo, 2007). As elaborated in Section 5.3.3, the current findings of the study have added interesting new pattern of gender differences in in-game motivation to future studies. This is because, there are no gender differences found in both *Achievement* and *Social* motivation.

Finally, the primary objective of this study is to understand the relationships between personality traits and in-game motivation of players. It is notable in Section 1.3 and Section 5.3.4, that the subject of the debates is remarkably new in the scope of psychological studies in gaming. Based on the current findings of the study, it is evident that there are significant relationships between the two variables. Therefore, this study has reinforced the body of knowledge in understanding the issue of relationships between personality traits and in-game motivation of gamers.

In conclusion, the overall findings of the present study have demonstrated the understanding of the issues presented and discussed particularly among PUBG players. As mention in Section 1.3 and 5.5, since this study is an early attempt in Malaysia, the findings are worth to be investigated further in the future.

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