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Massively Multiplayer Online Roleplaying Games and Their Effects on Life Satisfaction and Social Skills

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Abstract

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MA, Walden University, 2013

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Adult massively multiplayer online roleplaying games (MMORPGs) gaming is a popular trend that is often perceived negatively, including having a lack of social adaptation skills and low life satisfaction. This quantitative study explored whether life satisfaction and social skills were influenced by gaming by comparing MMORPG gamers (casual and avid) and nongamers. This quantitative survey study was built upon the limitations listed in previous research. The hypothesis was that there would be no difference between MMORPG gamers and nongamers regarding life satisfaction and social skills. To conceptualize the influence MMORPG may have, this study used Diener's conceptualization of the pursuit of happiness, which presumed that people could choose their happiness by engaging in activities that made them happy on an individual basis. Life skills were measured through the Life Satisfaction-11 Questionnaire and the Social Adaptation Self Evaluation Scale. The sample of 134 was collected by stratified sampling, and the data analysis was calculated using a multivariate analysis of variance. The results indicated that there was no significant difference in social adaptation skills between the groups. However, there was a significant difference in life satisfaction between causal and avid gamers, where casual gamers had less life satisfaction than avid gamers and nongamers. The positive social change implications on a societal level include highlighting the difference in adult gamers because the current results do not fall in line with previous findings, thus potentially changing the psychological view of the effect of video games.

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Dedication

For my husband Sean, who has dealt and learned to calm me down on the days when I was freaking out about finishing my degree, defeating cancer, and surviving neck surgery. I honestly do not know if I could have made it through some of the hurdles without you. Thank you from the bottom of my body, mind, and soul my love. To my mom for pushing me to strive for higher things and for my Oma who was there for most of this journey, may you rest in the afterlife.

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Table of Contents

ii

List of Tables

List of Figures

Chapter 1 Introduction to the Study

Video games continue to be a common commodity in many households. Video games provide individuals who enjoy fantasy with the ability to venture into fantasy realms to play against other individuals or just for the pure enjoyment of fighting monsters (Trepte et al., 2012). This study focused on determining the influence that massively multiplayer online role-playing games (MMORPG) had on adults' life satisfaction and social skills. In this study, I compared nongaming individuals to casual and avid gamers to understand whether MMORPGs affected an individual's life satisfaction or if it is based solely on the individual's perception.

Background

Fiske (2014) reported that social interactions highlight and potentially change an individual's viewpoint. On the other hand, Bong-Won and Kun Chang (2011) previously indicated that gamers perceive the world differently than other people. Bartle (2004) and Banks and Bowman (2016) stated that gamers viewed the world from different components (e.g., computer versus PlayStation, social game versus strategy games) as well as having other social interaction mediums, which included voice over internet service providers (VOIPs) or online chat. Playing video games, especially MMORPGs, is a way of life for many individuals (Achab et al., 2011). It is the gamer's way of decreasing stressors in everyday lives, building connections, and even at times escaping from the mundane or stressful world they currently reside in (Castelli & Carraro, 2011).

According to various studies, gamers believe that the virtual realm enhances their life satisfaction and their perspective about viewing the difference in cultures while interacting globally with others (Ferguson et al., 2015; Jang & Ryu, 2011). Video gamers, especially those who play online with thousands of other gamers, often present with more open-mindedness (Barnett et al., 2007). However, MMORPGs are often presented as unfavorable, and it was suggested that MMORPGs had the potential to negatively affect various aspects of an individual's life (Yao & Yu, 2016). This information included the realms of social interactions and life satisfaction (Bowman et al., 2012). Past research asserted the potential effects of too much gaming (Bowman et., 2012). These effects included overall negativity, negative social behaviors, violence, and decreased life satisfaction and/or mental health (see Albarracin & Handley, 2011; Bailey et al., 2012; Boxer et al., 2015).

Even though there has been an increased acceptance of video games over the past few decades, the media and other sources continue to stigmatize individuals who play MMORPGs regularly. Griffiths et al. (2003) noted, "The image of a typical gamer is seen as socially negative and remains firmly within a youth subculture" (p. 81). Furthermore, as Yee (2006) mentioned, it has become a challenge to eliminate negative assumptions about gamers and beliefs that they lack social or daily living skills.

Social media and previous research have provided information on the stigma about gaming and its potential adverse effects (Griffiths et al., 2003). Nevertheless, it has become crucial to highlight that many previous research aspects have been limited to

specific populations, primarily children, adolescents, and young adults under the age of 25 (Haagsma et al., 2013). Moreover, previous research has not indicated any potential benefits that gaming may present for individuals over the age of 25, including the possibility that it might enhance or balance issues related to life satisfaction and/or social skills. The Entertainment Software Association (ESA, 2016) found that over 44% of gamers were over the age of 35 when their survey was conducted.

Another viewpoint when observing MMORPG gaming is that it may offer a reason why gamers hang out in an MMORPG world with other like-minded people (see Crowe & Bradford, 2006; Li et al., 2011; Siemer et al., 2007). However, the research results are varied due to gameplay frequency and the individual's playing style and game at the time of the study. Furthermore, researchers have highlighted how perceived selves could be altered within a video game (Jin, 2011; Kim & Davis, 2009). The results by Banks and Bowman (2016) asserted that gamers could create the avatar that resembled their actual personality, which may not be allowed within their real-life emotions and self-esteem.

An individual who perceives themselves as a gamer does not always flaunt that they are a gamer. They are most likely aware of the stigma associated with MMORPG gaming or video games in the view of nongamers or some collective societies. However, researchers have provided insight into different reasons for a person wishing to escape into a virtual reality (see Adams & Baptist, 2012; Barnett et al., 2007; DeWall et al., 2011). The foundation of the participant's overall life satisfaction and relational

satisfaction have been studied, including leaving their stressful in real life (IRL) issues behind or escaping into a world where they could become a different individual (e.g., a timid individual becomes more robust).

As Kahn et al. (2015) pointed out, the stigma of the potential adverse influences gaming presents on social skills, and life satisfaction continues to disrupt what may have been an appropriate lifestyle for that individual. Kahn et al. mentioned that some individuals perceive gaming improves and balances their life satisfaction and social skills by interacting with individuals worldwide through MMORPG gaming. Jerabeck and Ferguson (2013) asserted that the influence of violent video games potentially affects prosocial behaviors towards self and/or others. This research also indicated that a violent video game did not genuinely alter prosocial effects but that peer influence was one of the leading causes of changing prosocial behaviors (see Greitemeyer, 2014; Griskevicius et al., 2006).

Problem Statement

In 2016, the ESA indicated that almost half of the gaming population was 35 years old or older. However, the vast majority of previous research has solely focused on child or adolescent populations. Information and analysis of adult populations were minimal. According to Ellithorpe et al. (2015), different information levels were crucial in understanding how MMORPG gaming has influenced and affected the adult gaming population. In this study, I refer to adults who do not play video games as nongamers. I compared casual gamers and avid gamers to nongamers to determine whether there is a

measurable difference between the groups in their life satisfaction and social skills (see Griskevicius et al., 2006; Haagsma et al., 2013; Yee, 2007; Yee & Bailenson, 2009).

Purpose of the Study

The purpose of this quantitative study is to see whether there is a difference in life satisfaction and social skills between casual and avid MMORPG gamers and nongamers. Bartle (2004) stated that gamers use MMORPGs to socialize and to decrease stressors of everyday living. However, previous research about gaming has solely focused on negative behavioral aspects, such as aggression and violence towards self and others in preadolescents and young adults (Amialchuk & Kotalik, 2016; Huang, 2006). Therefore, I aimed to address the effects MMORPG gaming has on adult gamers.

The quasi-experimental postonly nonequivalent control group design allowed two specific, nonrandomized independent variables: MMORPG gamers and nongamers. The dependent variable for this research was the measurement of life satisfaction through the usage of the Life Satisfaction 11 Questionnaire (LiSat-11) and social skills through the Social Adaptation Self Evaluation Scale (SASS).

Research Questions and Hypotheses

In this research, I intended to address the recognized gaps in MMORPG research and what effect an MMORPG had on life satisfaction and social skills when compared casual and avid gamers to nongamers. The independent variables were casual gamers, avid gamers, and nongamers. The dependent variables were life satisfaction and social skills.

The research questions and hypotheses were as follows:

RQ1: Are there differences in life satisfaction between casual gamers, avid gamers, and nongamers (as measured by LiSat-11)?

H_0: There is no difference in the levels of life satisfaction between casual gamers, avid gamers, and nongamers.

H_1: There is a significant difference in the levels of life satisfaction between casual gamers, avid gamers, and nongamers.

RQ2: Are there differences in social skills between casual gamers, avid gamers, and nongamers (as measures by SASS)?

H_0: There is no difference in social skills in casual gamers, avid gamers, and nongamers.

H_1: There is a significant difference in social skills between casual gamers, avid gamers, and nongamers.

Theoretical Framework for the Study

The theoretical basis for this study was Diener's (1984) and Diener et al.'s (1985) pursuit of happiness. This theory highlights the different paths people take to achieve overall well-being and life satisfaction and the influence on social relationships (Diener et al., 2017). Diener highlighted that happiness does not have one exact definition but that it has a culturally and philosophically diverse history. If his theory holds, happiness is what an individual creates in their life. Therefore, subjective well-being measurement is made.

Diener (1984) suggested that there are three major components to an individual's well-being. These include positive effects (pleasurable feelings), negative affect (painful feelings), and life satisfaction, such as assessing one's own positive and negative affect. Diener also provided detail into how an individual perceives their journey to achieve goals and aspirations. It is an individual's pursuit and adaptability for changing their perceptions of life satisfaction. These include but are not limited to psychological well-being, happiness in relationships (e.g., work, family, friends), and realistic expectations towards future goals (Diener, 1985).

Fugl-Meyer et al. (1991) built on Diener's pursuit of happiness theory by creating a questionnaire built on the premise that an individual's life satisfaction could be influenced by several additional factors, including physical health, hobbies, or social interactions. Fugl-Meyer et al. determined that neither gender nor age was a secondary factor in regards to happiness or life satisfaction as a whole. The information from Diener et al. (1985) and Fugl-Meyer et al. was taken into consideration, one an individual may find that the influence of MMORPGs is dependent on that individual and not on the MMORPG itself. Furthermore, in this research, comparing the potential differences between casual and avid MMORPG gamers and nongamers highlighted whether gaming has any effects on life satisfaction or social skills. Many factors influence an individual's view on life satisfaction (Silvermark et al., 2008). Such factors include significant life events (e.g., childbirth or death) or activities (e.g., playing sports, crafting). Furthermore,

Jacobsson and Lexell (2016) provided similar results by demonstrating that various influencing factors contributed towards or against life satisfaction.

Diener et al. (1985) emphasized that an individual and their surroundings could influence social relationships. For example, an individual who is socially active due to friends and social connections may not experience many negative mental health symptoms, specifically depression, like an individual who lacks friends and social supports (Stetina et al., 2011). Furthermore, individuals with a more significant number of social interactions are more likely to present with personal well-being and life satisfaction (Stetina et al., 2011). Social adaptability is a contributing factor influenced by an individual's behavior (Jerabeck & Ferguson, 2013). Consequently, the pursuit of happiness and/or well-being highlights how specific events contribute to an individual's ability to adapt. It also contributes and helps later researchers develop newer strategies to help intervene before the depressive symptoms increase, such as the research by Bosc et al. (1997).

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Nature of the Study

In this quasi-experimental, postonly nonequivalent control group design, I viewed the difference between MMORPGs gamers versus nongamers. Through the usage of a postonly nonequivalent control group via survey format, the difference in life satisfaction and social skills between casual gamers, avid gamers, and nongamers revealed that life satisfaction or social skills were not influenced by MMORPG gaming but by the individual. The independent variables included MMORPG gamers who played video games (e.g., casual gamers who played less than 25 hours per week and avid individuals who played MMORPGs 25 hours or more per week) and nongamers who did not play video games. The dependent variables in this study were life satisfaction and social skills.

Definitions

Avid gaming: A term used for gamers who played a minimum of 25 hours per week (Amialchuk & Kotalik, 2016).

Casual gaming: A term used for gamers who only played infrequently and/or spontaneously based on real-life situations and time. The average game time of a casual gamer was less than 25 hours per week (Amialchuk & Kotalik, 2016).

Class/build: The gamer's chosen character or toon build (e.g., warrior, mage, and tank) within the MMORPG (Yee & Bailenson, 2007).

Damage per second: The amount of damage a player or a group of gamers achieved against the enemy within the game (Smyth, 2007).

Gamer: An individual who plays video games or role-playing games (Bartle, 2004).

In real life (IRL): When speaking about a gamer's real-life experiences not associated with the game (e.g., cannot play MMORPG because of death in the family) or other issues (Barrett & Russell, 1998).

Massively multiplayer online roleplaying game (MMORPG): A type of video game within a virtual world where thousands or even millions of gamers play together or alone in a virtual role-playing environment (Yee et al., 2007).

Newbie or *noob*: The term for gamers who are new to the game or do not know about the game. At times it can be seen as a derogatory remark (Tausch & Hewstone, 2010).

Nongamer: An individual who does not play video games (Lafreniere et al., 2011).

Non-player character (vendor): A part of the game itself and not played by a real person. It is an artificial life created for each player's same purpose to interact (e.g., receive quests, rewards, or purchase items; Williams, 2006).

P*layer versus environment (PvE)*: The definition of what aspect of an MMORPG the player prefers, such as questing and killing monsters (e.g., computer-controlled enemies; Trepte et al., 2012).

Player versus player (PvP): Mostly considered the opposite of PvE for most gamers. PvPers are gamers who prefer to fight and battle other gamers to earn points and

enjoy the challenge of fighting and learning the opposing player's capabilities and knowledge (Yao & Yu, 2016).

Voice over internet provider (VOIP): Often used during specific gaming events such as raids or massive PvP events. VOIP allows the gamer to verbally communicate with other players not to become distracted from their role during an event by typing in the online chat.

Assumptions

In this study, I assumed that the instruments used (LISAT-11 and SASS) were psychometrically sound assessment tools for measuring the identified constructs. I also assumed that the participants were capable of understanding and completing the questionnaire provided in English. Furthermore, I assumed that the participants who represented the MMORPG gamers and nongamer populations participated in the study by honestly responding to the questionnaires and not merely providing socially desirable answers. It was also assumed that respondents would be honest about their experiences and feelings.

Scope and Delimitations

The scope of this research study was confined to individuals who belonged to online forums, were at least 25 years old, played MMORPGs, did not play video games, were on social media sites, and agreed to participate in a survey in the English language. There was the possibility that some MMORPG gamers and nongamers who met the criteria may have chosen not to participate, resulting in a sample with an unknown

sampling error. This study was not intended to focus on previous experiences that individuals had encountered before participating in this study. Even though the inclusion of prior experiences would have been of interest, I rejected this information due to it increasing the scope and length of this research.

Limitations

There were some inherent limitations in this study that threatened external validity. Researchers may have particular opinions regarding specific topics or populations. These specific opinions could create a restriction and/or bias towards the research. For example, researchers may generalize or skew beliefs, which could cause a bias towards the study itself, such as only contacting individuals that will assert the correct answers for the research, thus skewing the results (Johnson, 1988).

Additionally, a sampling error could not be estimated for this study, as I had no control over how often a participant may have completed the survey. For example, if a participant were to change their internet service provider address, that individual could have completed the survey multiple times, therefore skewing the data. The limitations of only using the assistance of acquaintances were that the data collected lacked randomized sampling and did not provide generalizations globally. Also, by having acquaintances distributing the survey, I may have only received data within a specific population group. This could have decreased the generalization possibility for the overall research.

Significance

Understanding how playing an MMORPG affects life satisfaction and social skills for adult casual and avid gamers helped expand on what has been learned by previous data obtained. As mentioned previously, most research regarding gaming has focused mainly on children, adolescents, and young adults under 25 (Daneva, 2017). However, adults' ages beyond 25 appeared to be rarely considered, precisely when playing MMORPGs or video games in general (Rehbein et al., 2016). This study served to extend the literature concerning populations of adult gamers. Moreover, it highlighted the effects MMORPG gaming had on the adult gamer when exploring life satisfaction and social skills by comparing the data to nongaming populations.

Summary

MMORPG gaming had presented different issues and was explored in more detail when I reviewed the needs and wants of individual MMORPG gamers and nongamers and how their activities affected life satisfaction and social skills. This study addressed some of these platforms, including social skills, personal well-being, life satisfaction, and relationship satisfaction. Barnett et al. (2007), Crisp and Turner (2010), and Gruesser et al. (2007) mentioned that there needed to be more focus on adult gamers and how the supposed adverse psychological effects were not always present in adult MMORPG gamers. This study added to the current literature on adult MMORPG gamer populations and how it affects the individual.

Chapter 2: Literature Review

This chapter addresses how playing MMORPG games devolves and influences individuals, society, emotions, and behaviors. The topics addressed in this chapter include the theoretical frameworks that highlight how emotions and behaviors influence an individual regardless of if the individual is a casual gamer, avid gamer, or nongamer. Furthermore, I discuss the research into positive and negative aspects of prolonged gaming and its influence on well-being, such as mental and physical health. There are different reasons for seeking out a given activity. These activities are based on an individual's wants and needs (Aksan et al., 2009).

Literature Search Strategy

For this study, literature was gathered through an extensive search of the Walden University Library and Google Scholar. The selected literature focused on peer-reviewed journal articles, studies, and published books that helped describe MMORPG gaming, life satisfaction, effects of gaming, and social skills. The primary databases included in these searches were Academic Search Complete, ProQuest Central, Digital Dissertations, Google Scholar, and Psych Info.

The simple search terms began with *massively multiplayer online role-playing games, effects of gaming, life satisfaction, social skills, adult gamers, virtual worlds, peers,* and *prosocial behaviors*. Additional sources, which were not presented in the initial search, were obtained in reference sections of identified journal articles.

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Theoretical Framework

The first theoretical framework for this study was based on Diener's (1984) and Diener et al.'s (1985) pursuit of happiness theory. The pursuit of happiness theory explained many different ways to achieve happiness or life satisfaction (Diener et al., 2018). The theory of the pursuit of happiness was founded on positive psychology. Moreover, it described how an individual's thinking could have altered the overall perception of happiness. The critical points of positive psychology reflected the bases of Diener's research in subject well-being and included abundance, virtues, and strengths; positive deviance; flourishing versus languishing; and happiness (Diener et al., 2002). Each aspect of positive psychology highlighted a different influence that life, in general, had on an individual (Corey, 2009).

There were several parts to positive psychology that were important to this study: (a) flourishing versus languishing and (b) happiness and well-being, including subjective well-being and psychological well-being (see Seligman, 2011). Flourishing represented the strengths, talents, and relationships, among other things, that provided fulfillment in one's life and allowed that individual to cultivate those positive feelings. In contrast, languishing referred to an individual who had failed to progress or be successful (Siemer et al., 2007; Seligman, 2011). When reviewed through positive psychology, happiness and well-being described emotional well-being, such as positive versus negative thinking (Maiolino & Kuiper, 2014).

Gorlin et al. (2018) explored happiness and well-being. Gorlin et al. determined that happiness is classified as an individual's state of mind. At the same time, well-being is the thriving force behind an individual's overall satisfaction and influenced happiness. Further, Peterson (2008) stated, "Positive psychology is the scientific study of what makes life most worth living. (paras. 4)" Essentially, positive psychology focuses on an individual's characteristics, such as life satisfaction, happiness, and well-being.

Positive psychology acknowledges and emphasizes that flourishing versus languishing is viewed differently from person to person and should be considered when working or talking with individuals (Gorlin et al., 2018). There are several components of well-being. These components, such as positive affect (pleasurable feelings) and adverse distress (painful feelings), influence an individual's life satisfaction (Maiolino & Kuiper, 2014). Pleasant feelings vary from individual to individual and fall under various categories, such as activities or situations that bring gratifying aspects to an individual's life (Sarkar, 2014). In comparison, painful feelings are derived from situations or activities that negatively influence the individual.

Fugl-Meyer et al. (1991) extended Diener's (1984) and Diener et al.'s (1985) pursuit of happiness. Fugl-Meyer et al. developed a questionnaire that explored different aspects of an individual's life satisfaction, including physical health, hobbies, or social interactions. Research has shown other effects for different influences in individuals in regards to life satisfaction and happiness. According to Diener et al. and Fugl-Meyer et al., individuals with more significant income appear to experience less life satisfaction

than middle-class individuals. Also, Diener et al. and Fugl-Meyer et al. determined that neither gender nor age had any influence on life satisfaction or well-being, but it had a high link with social interactions of the individual (e.g., social butterfly, friends, and activities). Therefore, I aimed to examine the difference between casual gamers, avid gamers, and nongamers to determine whether playing MMORPGs provided an influencing component towards an individual's life satisfaction or social skills (see Achab et al., 2011).

Social behaviors contribute to positive and negative behaviors (Banks & Bowman, 2016). Diener et al. (1985) demonstrated that an individual and their surroundings influence social relationships. For example, an individual who is socially active due to friends and social relationships does not experience as many negative symptoms of mental health, specifically depression, as an individual who lacks friends and social supports (Stetina et al., 2011). Furthermore, individuals with a more significant number of social interactions overall present with higher personal well-being and life satisfaction (Stetina et al., 2011). Social behaviors are influenced or adapted in conjunction with the pursuit of happiness and well-being. Social behaviors may also contribute to increased depressive symptoms, which were researched by Bosc et al. (1997).

Poor communication or lack thereof contributes to social skills deficiencies (Diener et al., 1985). These deficiencies contribute to developing or increasing depressive symptomology or depression itself. According to Kim-Prieto et al. (2005), there are four

significant subjective well-being stages. These stages include and relate in an object-oriented succession, which has life circumstances and events, affective reactions to the events, recall of the response, and evaluating one's life (see Diener et al., 2002; Kim-Prieto et al., 2005). Essentially, everything that an individual completes in their life alters or influences how they perceive their surroundings and interactions with other people or their environment (Kim-Prieto et al., 2005).

History

To understand MMORPG, one needs to understand the evolution that brought gaming to its current state. In Bartle's (2004) "*Designing virtual worlds*," he described the development of gaming. The first multiplayer games described by Bartle were called multiuser dungeons, and in 1978, Trubshaw (as cited by Bartle, 2004) coined multiuser dungeons as MUDs. As technology developed, so did the development of video games. This development eventually led to the creation of MMORPGs, especially once the internet became accessible for most households (Bartle, 2004).

Over the past 25 years, MMORPGs have established another way for individuals to socialize with other people and have created an outlet or hobby for socially awkward individuals (Amialchuk & Kotalik, 2016). Also, the advancements in the history of gaming included opportunities for PvP or PvE situations. However, even with the increased popularity of MMORPGs and the social interactions with other people, some individuals have perceived MMORPG gaming as another way to effect casual and avid

gamers' social relationships in either a positive or negative way (Achterbosch et al., 2017).

Impact of Game Play on Social Relations

Numerous factors have contributed to how a particular MMORPG influences social relationships (Bowman et al., 2012). Some individuals may exclusively only have social relationships in virtual worlds. Others may have neglected IRL relationships. It all depends on the person and how they interact with others. For example, some people may be enjoyable in real-life situations but lack these skills online. Although previous research has appeared to have focused on the negative impact of video games on children, adolescents, and young adults, some individuals have potentially been positively impacted (Bowman et al., 2012). For example, an individual may present as an introvert in the real world but is a social butterfly in an MMORPG (Crowe & Bradford, 2006; DeWall et al., 2011). There is also probable cause to believe that video games' overuse could affect physical and psychological well-being (see Boxer et al., 2015; Castelli & Carraro, 2011).

Positive Social Relationships

Describing a positive social relationship differs from person to person and culture to culture. Consistent communication and interactions with other gamers via in-game chat or VOIP have developed into intimate relations, some of which have grown into real-life relationships (Lin, 2010). Many times, these friendships began over social media sites such as Facebook or via email. There have been times when these virtually created

friendships turned into real-world relationships and have led to lifetime commitment (e.g., marriage, children; see Kardefelt-Winther, 2014). As DeWall et al. (2011) pointed out and Fiske (2014), sometimes the unknown was what attracted an individual, even if this person had never been seen before in real life. For example, getting to know an individual solely through a video game may allow them to become friends through mutual experiences or hobbies. Although it may have only been virtual, a bond of friendship was still created (Barnett et al., 2007). Nevertheless, the unknown can distract an individual and, depending on the individual, increase the probability of disrupting everyday requirements (Amialchuk & Kotalik, 2016).

<div align="center">**Work, School, and Other Engagements**</div>

There are known facts that gamers lose track of time and social life (Achab et al., 2011). Depending on the intensity of the individual's involvement in their game, individuals found themselves missing work, school, or other engagement priorities. There are serious issues that arose when an individual continuously missed real-life priorities, such as loss of grades, school/work attendance, loss of employment and finances, and missing significant events (e.g., the child's birth). The neglect potentially leads to other serious issues that could be prevented if the individual remained more aware of the intensity of his or her gaming habit (Huang, 2006). However, the additional stressor of losing employment or the dropping of academic achievements may cause the individual to turn back to their means of escape, creating even more significant problems associated

with their addictive behaviors (Barnett et al., 2007; Ferguson et al., 2015; Wong & Hodgins, 2014).

Satisfactions of Wants and Needs

MMORPGs tend to entice gamers with incentives to keep them interested in the game. As a result, there is a high chance of an MMORPG gamer detaching themselves from IRL social relationships (Adams & Baptist, 2012). There are different levels of rewards in games. For example, yearly events in the MMORPG World allow gamers to obtain rare items (e.g., mounts, clothing). In Rift, the player could receive random caches with powerful gear to make them a more sustainable player (Crowe & Bradford, 2006; Kahn et al., 2015). Another reward level was completing unique challenges or quests that only occurred once a day, week, month, or year (Kardefelt-Winther, 2014). The better the MMORPG gamer's armor/gear, the more advancement and particular zone they could access.

The last rewards system is the subscription-based games, free to play (f2p), and the pay to win. Subscription rates vary by company and game. Free to play is offered in subscriber games, but the gamer can only play the free content when using in-game currency (if applicable, like in WoW) to pay for the subscription. Alternatively, pay to win rewards is where the gamer uses IRL funds to pay for the best items, even if the individual is a carebear. The rewards system is not the sole reason for keeping individuals glued to the game, but it does play a part.

There are quests in many MMORPGs that required the gamer to complete them once started. If the gamer decided to start a four-hour quest chain, they must complete it not to lose the progress and experience gained (Crowe & Bradford, 2006). Therefore, countless gamers choose to let IRL engagements suffer. If the gamer is unable to complete a quest, he or she might become frustrated or angry. Williams (2006) pointed out that these mood changes are a common occurrence in MMORPG gamers. Failure to complete a questline could push an individual into addictive-like behaviors, such as needing to achieve power within the game of interest. Bailey et al. (2012) mentioned that the gamer's character's level and armor presented the progress one has made towards other gamers as a sign of status.

This progress provides the gamer with positive social feedback, which also helps the gamer receive the fulfillment of social needs, primarily if they cannot obtain this in IRL (Greitemeyer, 2014). According to Jang and Ryu (2011), the time spent only achieving the max level of everything within a particular game is not always enough for some individuals. Therefore, they create additional characters so that they can continue playing their favorite game. Once the gamer becomes bored with their current game, they transitioned into a new game or multiple games (Daneva, 2017). Often enough, the latest games are similar to the previous ones, and that is when the "rinse and repeat" cycle begins by relearning and achieving the rewards in the new game (Jerabeck & Ferguson, 2013).

Whether it is social or virtual, the quality and length of the interactions tend to suffer (Adams & Baptist, 2012). The MMORPG gamer has the potential to become obsessed with becoming the best or just being in the virtual world because nothing else matters to that individual at the given time (Gentile, Bender, & Anderson, 2017). The playtime intensity and duration can exceed 12 continuous hours in a day (Collins & Freeman, 2014). Besides creating difficulties in IRL situations, another aspect of extended game time is an altered thinking pattern and other harmful effects on health, life satisfaction, and mental health (Collins & Freeman, 2014).

Health and Mental Health

Two critical areas affected by time spent playing MMORPGs are physical and mental health (Haagsma et al., 2013). However, there are times where individuals feel as though they do not obtain what they want or need from their surroundings (Corey, 2009)—beginning in childhood and adolescence when everything appears to be changing. Adolescents may not feel appreciated or feel they are not gaining the satisfaction of their needs IRL. According to the recent research, adolescents who do not have their needs met in real life had a higher risk of developing pathological internet use issues or internet addiction (Liu et al., 2016).

Liu et al. determined an increased risk of internet addiction involved in MMORPG play. Liu et al. found that gamers had significantly higher depression and substance addiction rates than the general U.S. population, although they displayed lower rates of anxiety. Van Rooij et al. (2010) found that the 31.16 was the mean age for

gamers. In addition, more gamers were found to be in their 30s than in any other age

(Van Rooij et al.2010). By comparison, a study conducted using data collected between

2000 and 2003 found a mean age was 26.57 (Yee, 2006a). However, the previous

researchers found that the mean age varied from game to game, with an average range

from 23 to 30 (Yee, 2006a)**.** Previous researchers also found that avid gamers would

prolong or ignore bodily needs (e.g., hygiene, toileting). Countless gamers hold off on

using the restroom to unhealthy wait times. Others would only eat or drink minimally or

eat less healthy food options (e.g., fast food, snacks, chips, soda) in fear of not achieving

their goals within the MMORPG. Due to the amount of time spent playing an MMORPG,

countless gamers do not adequately exercise (Hagstrom & Kaldo, 2014). The lack of

exercise or movement could cause physiological issues, such as blood clots (Haagsma et

al., 2013).

Achab et al.'s (2011) research on addicted gamers shows a statistically significant

negative correlation between physical health from self-reports related to the amount of

time spent playing online games. This finding highlights the potential impact of inactivity

of a gamer sitting or lying down for extended periods and not being physically active.

According to Smyth (2007), there are reasons for concern that need to look at the

consequences of excessive amounts of time spent playing an MMORPG.

Smyth (2007) pointed out that sleep quality is significantly lower in the

MMORPG groups compared to comparison groups. Smyth (2007) hypothesized that, due

to the already lowered physical health and sleep deprivation, gamers increased their

amount of time played due to not being able to sleep, which in turn can begin a vicious cycle of continued lack of exercise, appropriate diet, and increase in smoking. Overall, when looking at the previously mentioned constraints to physical and mental health, these adverse effects have a higher probability to negatively influence an individual's life satisfaction and social skills (Achterbosch et al., 2017).

Demographics

Society and the media have set forth an image of a typical gamer; he (used advisably) was assumed to be a young male individual (Kasumovicet al, 2015). Yee (2006) asserts that although most MMORPG gamers are males, the female gamer populations are increasing considerably. The stereotypes created by social media and society do not end here; there continues to be other inaccuracies regarding MMORPG populations. Despite the stereotypes, not all gamers conform to an image; some manage to balance their gaming endeavors and met IRL requirements. (O'Connor et al., 2015).

Various research studies examine variables that have not been explored in other studies, such as race and religion (Albarracin & Handley, 2011; Ellithorpe et al., 2015). Most of the gamers (87.62%) are Caucasian (ESA, 2020). African American, Hispanic, and Asian gamers are all underrepresented relative to the general U.S. population, according to Williams et al. (2009). The only ethnic minority group that was more common in EverQuest2 (EQ2) than in the U.S. was Native Americans (Williams et al., 2009). Concerning religion, previous researchers found very different results. Compared to the general U.S. population, gamers were significantly more likely to belong to a

religion other than Christianity or Judaism or choose "no religion" (Williams, 2009).

MMORPG gamers are considerably less likely to identify as Christian than the general

U.S. population and are equally likely to identify as Jewish (Williams et al., 2009). The

study by Williams et al. was conducted ten years ago and only involved a single game.

The demographics may have changed over time or maybe unique to this game. The study

conducted solely with Italian high school students provides insight into how particular

games can influence an individual's view regarding another gender (Gabbiadini et al.,

2016). Specifically, when playing games such as Grand Theft Auto, which has a history

of portraying females more provocatively (e.g., prostitute) (Gabbiadini et al., 2016).

Further, the insight gained by Gabbiadini et al.'s (2016) study also indicates that it is

dependent on the individual and how they are being influenced.

In 2004, Griffiths et al. conducted a study comparing adolescent EverQuest

gamers with adult EverQuest gamers. Griffiths et al. defined an adolescent as a player

under the age of 20. Of the 540 gamers surveyed, 16% were adolescents. Griffiths et al.

found several significant differences between adolescent gamers and adult gamers;

unsurprisingly, there is a linear correlation between age and how long the player has been

playing. Time played per week did not have a linear relationship with age. However, the

younger groups played significantly more than the older groups and the gamers aged 20

to 22 have the highest play frequency. Considerably more adolescents selected combat as

their favorite feature of the game, while adults were significantly more likely to choose

that as their least favorite feature (see Griffiths et al., 2003). When asked what aspects of

their life they sacrificed to make time for EQ, adolescents were significantly more likely to say work or education and significantly less likely to say socializing. Whereas adults strived for balance to enjoy MMORPGs after a hard day's work (Adams & Baptist, 2012; Bailey et al., 2012; Banks & Bowman, 2016)

There is little quantitative research available about the possibly distinct characteristics of older MMORPG gamers. This is a population that should not be overlooked. The qualitative survey by Quandt et al. (2008) on older gamers provides some insight into older MMORPG gamers' experience. Details are limited regarding the type of games played by the interviewees. However, it was determined that older gamers were defined as 35 and older to sample a broad range of individuals who did not grow up with gaming technology in their childhood (Rehbein et al., 2016).

A distinct difference is noted between gamers aged 35 to 50 and gamers over 50 years old (Quandt et al., 2008). Many gamers in the younger group first began using computers in their teens and twenties (e.g., a video game was an extension and adoption of the interest in computers such as writing programs). On the other hand, in the older group, they learned about computers in general through work or their children. Furthermore, other reasons mentioned that influenced the gaming of the older individuals (e.g., an illness that caused the individual to lose mobility). However, Quandt et al. (2008) noted that the stigma of gaming and the lack of acceptance from family members and peers in the same age group were apparent. Many older gamers state that their gaming has a positive effect on their relationships with the younger generations.

The interviewees in Quandt et al. (2008) research remarked that younger gamers appeared to display higher emotional instability rates and inappropriate behaviors instead of focusing on competition and achievement. Nonetheless, younger gamers have a higher addiction rate. Whereas, in comparison, older gamers concentrate on the social aspect and social activities. The authors noted that guilds and clans exist specifically for older gamers to play with each other. Women have consistently been found to comprise a minority of MMORPG gamers (Williams et al., 2009). Yee (2006a) found that gender composition varied from game to game, with women ranging from 9% to 20%. Other surveys (e.g., Griffiths et al., 2004; Williams et al., 2009) also found gender ratios within the same range. Yee (2006a) found that female gamers from a multi-game sample are older than male gamers and that these female gamers are more likely to have been introduced to the game by a romantic partner (26.9% vs. 1.0%). Unexpectedly, female EverQuest 2 gamers play more than male gamers, a result for which the authors had no explanation (Williams et al., 2009).

One possible reason for this may be found in Yee's (2006) research that male and female MMORPG gamers value casual in-game socializing equally, female MMORPG gamers value emotionally close in-game relationships more. This can potentially lead to a more time-consuming online social life. The same study found that male gamers are more interested in achievement than females but noted that this difference is better explained by its relationship to the player's age (Achterbosch et al., 2017). However, more recent research points out that female gamers do not only enjoy games due to a partner

introducing them but utilizing gaming as a platform to find interactions with other

individuals or because they enjoy the adventure or violence of the game they are

currently playing (Achterbosch et al., 2017; Soutter & Hitchens, 2016).

<div align="center">**Motivation to Strive for Balance**</div>

Nongamers, society, or the media view playing an MMORPG as sitting passively

in front of a computer and being lazy (see Amialchuk & Kotalik, 2016; Daneva, 2017). In

all reality, the gamer has complex virtual experiences consisting of various activities. It

depends on the individual and how they perceive gaming motivation; thus, the influence

an MMORPG has on the individual (Daneva, 2017). Yee's (2006) research asserted

different complex aspects and causes about the reasons individuals game. The model

mentioned in Yee's (2006) research is based on Bartle's Player Types. Bartle (2004)

proposed four significant types of gamers: Achievers, who pursued game-related goals;

Explorers, who learned as much as they can about the world; Socializers, who seek to

spend time with others; and Killers, who attempt to disrupt the enjoyment of others.

Although Richard Bartle holds a Ph.D. in Artificial Intelligence (Bartle, 2004), he

cautions in his article that he is not a psychologist, and his ideas should be evaluated

accordingly. His model, although often cited, was never empirically tested (Yee, 2006).

Yee et al. (2012) used the gameplay questionnaire's original motivations,

reworded it for more direct and consistent phrasing, and condensed it down to 12 items.

The scale was condensed by using several consecutive pilot surveys to identify items

with high factor results. Whereas the original motivations were identified using a sample

from a variety of favorite MMORPGs. The new scale was validated exclusively using gamers from World of Warcraft. It was unclear what game or games the participants in the pilot surveys played. The consistency between the two 3-factor structures suggested that these motivations were primarily generalizable across games, although it seems possible that some games produced different patterns of gameplay that the analysis failed to detect (see Yee N., 2006; Yee et al., 2012).

Demetrovics et al. (2012), on the other hand, appeared to focus on the ideal experience derived from gaming activities, such as individuals improving their concentration or experimenting with their identities by creating the scale to access problematic online gaming questionnaire (POGQ). Although these scales may have been helpful when doing quantitative analysis, any such scale would inevitably oversimplify the gaming experience (Demetrovics et al., 2011). Yee (2006) points out that there is no significant difference between men and women in socializing; Women scored significantly higher on the relationship component. Failing to view the two genders as separates may fail to draw essential distinctions when addressing men's and women's motivations for play. Many gamers are interested in activities that are outside the goals defined by the game.

Summary and Conclusions

MMORPGs are played by millions of individuals daily. Many individuals play these solely for amusement. Each day is a new day to meet, greet, and socialize with other gamers. These interactions form relationships that extended beyond the game into

the real world. It is of interest to determine the potential effects MMORPGs have on casual and avid gamers compared to nongamers. The literature review demonstrates and supports that gaming affects the gamer's life satisfaction and social skills.

Furthermore, several previous research studies have indicated the different effects gaming has on other populations and age groups. This study seeks to add to the body of knowledge by examining a subjective well-being model of how playing MMORPGs can positively or negatively influence the casual and avid MMORPG gamer's overall life satisfaction and social skills. Chapter 3 discusses the research methodology for this study and the scales and data analysis used.

Chapter 3: Research Method

My objective in this quantitative study was to compare three specific populations that consisted of casual gamers, avid gamers, and nongamers. The research provided information on whether video games influenced or altered the perception of an individual's social skills and/or life satisfaction. In this chapter, I illustrate why this study occurred from a quantitative perspective. This chapter includes the research design, sampling criteria, and procedures for collecting and analyzing data. I also include a review of threats to validity, construct, and a description of measures to protect the participants' ethical rights.

Research Design and Rationale

Postonly nonequivalent control group designs were more appropriate when comparing effects between two populations or treatments of the populations (e.g., individuals who play MMORPGs and those who did not). Such a design allowed me to collect and compare treatment data (see Creswell, 2014). The primary disadvantages were that (a) I had no control over participants completing the self-report measures via survey and (b) there was a threat of assignment bias. Specifically, I could not be sure that population differences were caused by the action of playing or not playing MMORPGs (see Gravetter & Wallnau, 2017). A quasi-experimental, postonly nonequivalent control group design was chosen because there was no random assignment in the posttest. There was no random assignment, so that the groups may be nonequivalent (e.g., casual gamers,

avid gamers, and nongamers). I intended to examine and compare possible differences between the populations (see Frankfort-Nachmias & Nachmias, 2008).

Research Questions and Hypotheses

This research's respective variables were based on Fugl-Meyer et al.'s (1991) life satisfaction and Bosc et al.'s (1997) social adaptation questionnaires. The independent variable was gaming (casual gamers, avid gamers, and nongamers). The dependent variables were life satisfaction and social skills. Social skills were measured using SASS by Bocs et al. (1997), and life satisfaction was measured by the LiSAT-11 by Fugl-Meyer et al. (2002).

I intended to address the recognized gaps in MMORPG research and what effect an MMORPG had on life satisfaction and social skills when comparing casual and avid gamers to nongamers.

The research questions and hypotheses were as follows:

RQ1: Are there differences in life satisfaction between casual gamers, avid gamers, and nongamers (as measured by LiSat-11)?

H_0: There is no difference in the levels of life satisfaction between casual gamers, avid gamers, and nongamers.

H_1: There is a significant difference in the levels of life satisfaction between casual gamers, avid gamers, and nongamers.

RQ2: Are there differences in social skills between casual gamers, avid gamers, and nongamers (as measures by SASS)?

H_0: There is no difference in social skills in casual gamers, avid gamers, and nongamers.

H_1: There is a significant difference in social skills between casual gamers, avid gamers, and nongamers.

Population

The target populations of this study were MMORPG gamers (casual and avid) and nongamers. Casual gamers were defined as individuals who played MMORPGs less than 25 hours per week, whereas avid gamers played a minimum of 25 hours per week. Nongamers were defined as individuals who did not play any video games. For this study, the population surveyed was a minimum of 25 years or older. The rationale for at least 25 years of age was due to previous research focusing primarily on age groups 25 or younger (see ESA, 2016; Fox & Tang, 2014).

Sampling and Sampling Procedures

There were several options when determining which sample collection method would be of best interest to this research. I compared the various sampling options, such as simple random sampling and cluster sampling. Simple random sampling could have provided multiple samples; however, random sampling could not be categorized into specific groups. Therefore, I chose stratified sampling for the given research. The stratified sampling allowed me to divide populations into groups, thus creating the advantage for a smaller sampling size that could increase the precision with a smaller sample size (see Creswell, 2014).

Nonetheless, the disadvantage of stratified sampling was that it was not representative of the populations because (a) not all MMORPG gamers participated in listservs, forums, or VOIP, and (b) I did not influence the selection of participants (see Frankfort-Nachmias & Nachmias, 2008). Moreover, Creswell (2014) highlighted the importance of the population sample size and its effect on the overall results. Therefore, by correctly identifying the most suitable sampling size, I decreased the issues in this research's overall outcome.

For this particular research, the multivariate analysis of variance (MANOVA) was chosen over the analysis of variance (ANOVA). Although the ANOVA allows a researcher to evaluate the mean difference between groups, it only evaluates one dependent variable at a time (Williams, 2015). In comparison, the MANOVA is similar to the ANOVA, as it completes the exact measurement; however, with the MANOVA, the research compares all the groups to multiple dependent variables simultaneously (Williams, 2015). The G*Power calculator was created to assist researchers in the social sciences fields in finding the most appropriate or suited sample size for their research. According to the information provided by Faul et al. (2007), this was allowing me to find the most suitable sample size and method to calculate the research.

To determine the minimum or recommended sample size to compare to specific populations, I used the G*Power 3.1.9.2 calculator (see Faul et al., 2007). The G*Power 3.1.9.2 calculator was set to MANOVA global effects and the moderate effect size = 0.0625, α = .05, β = .80 (see Faul et al., 2007) and two total predictors (life satisfaction

scale and social skills self-evaluation; see Gravetter & Wallnau, 2017). The rationale for choosing these parameters was based on the following. I did not want to make a Type I error that would be an unwarranted hypothesis. By minimizing the chance of its occurrence, I set the significance level with alpha at $\alpha = .05$. Creswell (2014) reasoned that a study should be designed to have an 80% probability of detecting an effect. Essentially, the reasoning for $\beta = .80$ being chosen was that studies should have no more than a 20% probability of making a Type II error (see Gorard, 2010). Lastly, the effect size of 0.0625 was chosen because the effect size was a simple way of quantifying the differences between groups (see Taherdoost, 2016). This had many advantages over using statistical significance tests alone because it emphasized the size of the difference rather than confounding with sample size (Williams., 2015). After having determined the parameters, the G*Power calculator revealed the need for 99 participants for this study. Therefore, each group had 33 participants.

Procedures for Recruitment, Participation, and Data Collection

The gaming populations and some nongamer populations were recruited through notices to several forums such as GameFAQs social board where any topic could be discussed. I also used Reddit's subreddit for research called SampleSize and an MMORPG.com off-topic forum that discussed a large variety of issues, which included current, past, or trending games and social media sites such as Facebook and Twitter. Recruitment also occurred through word of mouth and VOIP. Most gamers interact over VOIPs; I informed individuals during VOIP chat about the research, asked them to

participate, and provided a link within the written chat box. Participation was on a volunteer basis, which meant that the participants self-selected to participate in this study. There were three inclusion criteria for the participants in this study: Participants must be at least 25 years of age, read and understand English, and currently be a casual or avid gamer of an MMORPG or a nongamer. Individuals who met the criteria were invited to participate in the study. The link to the survey was listed on previously mentioned social media and forums. The participants chose to participate in the research study by clicking on the link that took them to the survey.

The first thing that participants saw when accessing the online survey was the informed consent form. Once the participants read the consent form and felt that they understood the study and chose to participate, they then clicked a box indicating "I understand and consent to participate in the study" before accessing the survey. After the participants completed the demographics, LiSat-11, and SASS questionnaire, a final page appeared to thank participants for their time and provided a phone number and email address if they had questions about the study or wanted to receive a summary of the results.

Materials and Instrumentation

The complete survey and its purpose were explained before the participant began. The explanation entailed informed consent, life satisfaction, social skills, and demographics (Appendix A). The survey took approximately 15 to 20 minutes to complete but was subjected to the participants' completion speed.

The inventories that were used in this study included the LiSAT-11 and SASS, as well as a short demographic questionnaire (see Appendix A), which included questions about gaming behavior and the inclusion criteria. The LiSAT-11 was a public domain of psychological instrument and can be used for educational and research purposes without asking the authors directly for permission (Fugl-Meyer et al., 1991). The SASS was also a public domain of psychological instrument and could be used for educational and research purposes without asking the authors directly for permission (Bocs et al., 1997).

Life Satisfaction Questionnaire 11 (LiSat-11)

The LiSAT-11 was an extension of the LiSAT-9, with the addition of two items relevant to somatic and psychological health (Fugl-Meyer et al., 2002). The LiSat-11 was an 11-item measure developed to evaluate levels of life satisfaction. Ten items in the questionnaire were specific to well-being aspects, including relationships and family (Fugl-Meyer et al., 1991). The 11th item assessed global life satisfaction (e.g., "life as a whole is"). Each item was rated on a six-point Likert-type scale ranging from 1 (*very dissatisfying*) to 6 (*very satisfying*). However, the scores for the LiSat-11 would range from 9 to 66, as two questions provided opt-out options for individuals who felt as though those questions did not apply to them. Therefore, the higher that score, the more satisfied individuals were with their lives (see Fugl-Meyer et al., 1991).

Reliability and Validity of LiSat-11

Fugl-Meyer et al. (1991) determined that the psychometric properties of the LiSAT-11 were acceptable. Fugl-Meyer et al. (2002) determined that the LiSAT-11 had

high internal reliability (Cronbach's α = 0.85). In addition, by utilizing a Spearman

analysis, Fugl-Meyer et al. (2002) determined that the co-variance coefficients for all 11

items differed considerably (*rs* =0.09 to 0.67, p < .001), though each were significant.

Additionally, when the LiSat-11 was viewed from individual components, it

emphasized some areas more than others (see Boonstra et al.,2012). For example,

Silvermark et al. (2008) determined that the LiSat-11 showed acceptable construct

validity, especially when looking at: "Closeness" (Cronbach's α = 0.79), "Health"

(Cronbach's α = 0.66) and "Spare time" (Cronbach's α = 0.68), all three of which had

acceptable internal consistency (page 3). However, according to Silvermark et al. (2008),

the *provision* subscale lacked acceptable consistency with a Cronbach's α = 0.57 (pp.3).

Therefore, dependent on the individual's viewpoint on specific categories within the scale

could skew the results' reliability and validity. Furthermore, Jacobsson and Lexell (2016)

indicated that the LiSat-11 had moderate to strong correlations compared to other life

satisfaction scales such as the Satisfaction with Life Scale.

For instance, life satisfaction depends on the individual and their perception of

life, which determines how the questions on the self-report are viewed at the time of

testing. Essentially, if the individual at the time of the study presented with overall

satisfaction, in that case, their response may vary dramatically compared to an individual

who perceives life from an opposing viewpoint (see Gorard, 2010). Consequently, the

research on MMORPG's possible influence on life satisfaction sheds insight into social

behaviors and the different impacting factors presented towards an individual or a specific population.

Social Adaption Self-Evaluation Scale (SASS)

Social skills and functioning were measured using the SASS, which was a 21 item self-report form. This scale is used to assess an individual's ability to adapt to and in social roles (Bosc et al., 1997). The SASS was developed to examine a range of social functions, including measuring work enjoyment, hobbies, family, relationships, and vainness (Bosc et al., 1997). Participants complete the SASS and rate each item on a scale from 0 (poorest) to 3 (greatest). The minimum score is 0, and the highest possible score is 63. It is important to note that the first question in the self-report depends on the individual's response. For example, if the participant answers yes, he or she should answer the following question.

Nevertheless, if the participant answers no, the participant is supposed to proceed and skip to the next question. There are possibilities that the participants may answer all the questions and not follow directions. Bosc et al.'s (2002) research concluded that the higher the rating a participant achieves, the higher their social adaptability. This instrument is designed for use with individuals aged 18 and over who have above a fourth-grade reading level and takes approximately 5 to 10 minutes to complete (Bocs et al., 1997).

Reliability and Validity of the SASS

Bech et al. (2002) tested the SASS on individuals with depression. It showed that the internal validity equaled 0.74 when calculated with the Cronbach α-coefficient. Therefore, the internal validity is considered suitable for the SASS. Moreover, according to Ueda et al. (2011), the SASS was adapted and tested to see if it presented with the same validity and reliability when used on Japanese participants (SASS-J). Furthermore, the research by Tse and Bond (2007) evaluated the SASS on Chinese populations (C-SASS). They found that the C-SASS was calculated to have high internal consistency with Cronbach alpha=0.97. Although Tse and Bond's (2007) instrument presented with higher psychometric properties, its limitations could have contributed to this factor, as their study was based solely on college students compared to Bocs et al.'s (1997) that focused on large cluster populations.

Moreover, although there are known differences between cultures, such as Chinese and Western cultures, the SASS has shown its adaptability for different cultures (Tse & Bond, 2007). Although there are cultural variances in aspects of social roles and skills, SASS's adaptability asserts the diversity of the scale. Moreover, one conceivable clarification is that there might be contrasts among European, Chinese, and Japanese social practices and traditions, as some past investigations have mentioned. By large, Japanese people may be inclined to set up associations with others, organizing their environment, or partaking in community life.

The validity of the SASS was based on a sample of 4000 participants in various populations. According to the results, the SASS held internal validity since the linear correlation between the total SASS score and the same total less one item always exceeded 0.98 (Bosc et al., 1997). SASS's internal validity declared how well the scale depicted the avoidance of confounding variables. Furthermore, the external validity in Bosc et al.'s (1997) research shows and confirms the scale's sensitivity to socio-professional categories. The socio-professional categories included salaried executives, wage-earners other than executives, self-employed workers, students, unemployed persons, retired persons, and other non-working people. The extent of the differences between the mean SASS total score of different social categories is minimal, as evidenced by the mean scores of executives being 43.9, non-executives 41.5, self-employed 40.9, students 41.5, unemployed 39.7, retired 42.1, and other non-workers mean score at 41.6 (Bocs et al., 1997). The overall results indicated that it was the individual and how they perceived their standing in social adaptability and not the socio-professional ranking (see Bocs et al., 1997; Tse & Bond, 2007; Ueda et al., 2011).

Data Analysis

For this research, I determined that the most suitable analytic strategy would be using a MANOVA. According to Frankfort-Nachmias and Nachmias (2008), using MANOVA was preferable to ANOVA because a one-way MANOVA allowed me to compare two response variables (e.g., life satisfaction and social skills) with a single factor variable (e.g., gaming). More precisely, the MANOVA allowed the comparison of

three independent variables and two dependent variables simultaneously, whereas the

ANOVA only allowed one comparison at the time. The MANOVA also highlighted the

difference in life satisfaction and social skills between casual, avid gamers and

nongamers. In this research, I included the use of the SPSS computer software.

Threats to Internal Consistency

Threats to internal validity occur when additional factors allow for alternative

explanations of what causes an effect on the dependent variable in a study (Creswell,

2014). In this study, I used stratified sampling and a quasi-experimental, postonly

nonequivalent control group design, allowing for a comparison of three separate groups.

The potential threat when comparing three groups was the equivalency of the participants

in each group. For example, if one group had a substantially higher number of

participants, it could have skewed the study's internal consistency. Another potential

threat was if one group held more of one gender versus another, and an additional threat

was if one group had more of a difference in ages versus the other groups.

Threats to External Validity

Threats to external validity occur when the researcher makes incorrect inferences

and generalizations to the accessible population (Frankfort-Nachmias & Nachmias,

2008). There are specific instances where making the wrong decision alters the proposed

research (Creswell, 2014). For example, in this study, I used a stratified sample with

volunteer participants, which allowed for the most appropriate sampling method.

However, using this sampling method, a sampling error could not truly be estimated due

to me not having control over the population who responded to the survey. Therefore, the sample population may have had greater representation from the gaming population than the nongaming population. Likewise, the participation rate and the population ages may have altered the validity of this research. (see Voulgari et al., 2014). For example, if one age group was more represented, it could have skewed the overall results, as it would not necessarily represent the population being evaluated.

Ethical Procedures

Before proceeding with data collection, I presented a description of the study methods and procedures to the Institutional Review Board (IRB) of Walden University. IRB approval was given, and the IRB number for this study 08-12-19-0200003, and it expired on August 11, 2020. An invitation to the study that included the link to the online survey hosted by SurveyMonkey was posted on the previously mentioned websites and Facebook page.

When participants clicked on the link provided, they were redirected to a survey webpage where they read the consent form and had the option to participate or not participate. Clicking on the link to participate indicated informed consent, and the online survey would commence. If the participants did not consent, they were sent to a thank you page. Moreover, all participants were informed that they could withdraw without experiencing any negative consequences. No personal identifying information, such as names, addresses, or Social Security numbers, was gathered during this process.

Furthermore, this research study would not focus on or target vulnerable populations and had no control if vulnerable populations accessed the online survey.

Additionally, the data located through this research was obtained by downloading the data from the SurveyMonkey website in a password-protected and Excel (XLS) format. This allowed me to complete data analysis. According to SurveyMonkey (2017b), the data collected would be stored as long as the individual held an account. This researcher planned to keep the account for up to 6 months until data collection and data analysis were completed. However, if the account holder did not have enough room, data would be purged from the system to make room for new data. The data was stored and watched 24/7 monitoring through firewalls, bug scanning, third-party scanning, as well as other formats for the protection of data and user information (Survey Monkey, 2017). Once the download was completed, this researcher planned to keep and store the data on an encrypted and password-protected file and flash drive for a minimum of 5 years. This data cannot be obtained by others unless requested by permission. Then the data would be deleted and purged from the computer file and the encrypted flash drive

Summary

The purpose of this chapter was to describe the research methodology for this quasi-experimental, postonly nonequivalent control group design study. This study had two models that assisted in exploring the effects of MMORPGs. The first model examined the impact MMORPGs had on life satisfaction. The second explored the impact MMORPGs had on the social skills of casual and avid MMORPG gamers. In all

cases, this researcher evaluated through comparing causal and avid MMORPG gamers to nongamers whether MMORPG gaming effects life satisfaction and or social skills in individuals aged 25 or older. Data obtained from a stratified sampling of online gamers and nongamers around the world through the self-report survey. MANOVA was used to address the difference in life satisfaction and or social skills compared to casual and avid MMORPG gamers and nongamers. Emphasis was placed on protecting the participants' rights, which ensured that this study was ethically sound. Chapter 4 examined the data collection and the results of this study. LiSat-11 and SASS were used for data collection along with a demographic.

Chapter 4: Results

In this study, I assessed the statistical differences between casual, avid, and nongamers regarding life satisfaction and social skills. I also reviewed the potential aspects of MMORPGs and their ability to influence life satisfaction and social adaptation compared to individuals who did not play video games. Survey data was gathered from a stratified sample of 134 gamers and nongamers. The participants' responses to the LiSat-11 evaluated the overall well-being and life satisfaction. The SASS assessed the general social adaptability skills of the participants. This chapter includes the study design, participants, data collection methods, and the analysis results.

Research Questions and Hypotheses

RQ1: Are there differences in life satisfaction between casual gamers, avid gamers, and nongamers (as measured by LiSat-11)?

H_0: There is no difference in the levels of life satisfaction between casual gamers, avid gamers, and nongamers.

H_1: There is a significant difference in the levels of life satisfaction between casual gamers, avid gamers, and nongamers.

RQ2: Are there differences in social skills between casual gamers, avid gamers, and nongamers (as measures by SASS)?

H_0: There is no difference in social skills in casual gamers, avid gamers, and nongamers.

H_1: There is a significant difference in social skills between casual gamers, avid gamers and nongamers.

Data Collection and Screening

Survey data were gathered from a stratified sample that was drawn from three separate classes of the population. The stratified sample contained 42 casual gamers, 33 avid gamers, and 57 nongamers who visited Facebook, Twitter, gaming forums, and Reddit's subreddit forums. Life satisfaction of casual, avid, and nongamers was measured through the LiSat-11. The social adaptation of casual, avid, and nongamers was determined through the SASS. Both scales allowed the participants to review how daily or weekly activities influenced their overall perception of personal life satisfaction and social adaptation.

This survey's data collection process was initiated on August 14, 2019, and ended September 05, 2019. In this time, a total of 158 respondents completed the survey. Out of the responses collected, 26 (17%) were removed for not meeting the requirements or noncompletion of the survey. The data of 132 (83%) participants were used. Screening for this survey occurred in the following manner. There were three inclusion criteria for the participants in this study: Participants had to be at least 25 years of age, read and understand English, and were a casual or avid gamer of an MMORPG or a nongamer. Individuals who met the criteria were invited to participate in the study. The survey's link was listed on social media and gaming forums and Reddit forums, where the participants

chose to participate in the research study by clicking on the link that took them to the survey.

Data Analysis

The minimum and required sample size were determined using the G*Power 3.1.9.2 calculator (see Faul et al., 2007). The G*Power 3.1.9.2 calculator predicted that each group required a minimum of 33 participants, which totaled 99 overall participants for the survey. The calculator was set to MANOVA Global effects and the moderate effect size = 0.0625, α = .05, β = .80 (see Faul et al., 2007), and two total predictors (life satisfaction scale and social skills self-evaluation; Gravetter & Wallnau, 2017). The surveys were hosted online through SurveyMonkey for 3 weeks, from August 2019 to September 2019.

Participants were invited to participate in the study through gaming forums such as MMORPGs.com, Reddit's subreddits, social media, Facebook and Twitter, and flyers on college campuses and gas stations. Participants were required to confirm that they were at least 25 years old and were capable of reading and understanding English. Further, participants currently casually (playing less than 24 hours per week) or avidly (playing more than 25 hours per week) played MMORPGs or nongaming, online virtual reality games, or both. A total of 158 individuals chose to participate in this study. After removing the 26 survey responses from the data set, this left a total of 132 responses for data analysis.

Descriptive Statistics

The participants identified their standing regarding gaming and were sorted in the chosen population (e.g., casual, avid, or nongamer). Many of the survey respondents identified as nongaming individuals ($n = 57$, 41.61%), second were casual gamers who played 24 hours or less per week ($n = 42$, 30.66%), and third were avid gamers who played more than 25 hours per week ($n = 33$, 24.09%), presented in Table 1. Further, most participants were male (60.0%), with fewer females (40.0%). However, when reviewing the variables of comparison groups of gamers to nongamers, the female-male ratio was male (40.8%) and female (16.3%) gamers and female (23.7%) and male (19.3%) nongamers.

Nonetheless, the recommended group size ($n = 99$) was much smaller than in the previous research. This research survey had a total of 132 participants, where the majority were nongamers ($n = 43.0\%$). Compared to the study conducted by Gough (2019), there was an increase in the female population. According to the information provided in Gough's research, the female population increased from 38% to 46% within 13 years. Therefore, the proportionality of the female to male ratio yields similarity to previous research, although this research yielded fewer required participants. The data for the gender ratio is represented in Table 2.

Table 1

Descriptive Statistics

	Time	Mean	Std. Deviation	N
TotalSocial	24 hours or less	40.3810	12.07487	42
	25 or more	39.9697	20.47786	33
	nongamer	43.8421	13.91786	57
	Total	41.7727	15.30284	132
TotalLife	24 hours or less	36.5476	6.74339	42
	25 or more	41.6364	6.25908	33
	nongamer	39.4561	7.33648	57
	Total	39.0758	7.11157	132

Table 2

Participant Ratios

			Gamer			
			24 hours or less	25 hours or more	Non gamer	Total
Gender	Female	Count	16$_a$	6$_b$	32$_a$	54
		% of Total	11.9%	4.4%	23.7%	40.0%
	Male	Count	26$_a$	29$_b$	26$_a$	81
		% of Total	19.3%	21.5%	19.3%	60.0%
Total		Count	42	35	58	135
		% of Total	31.1%	25.9%	43.0%	100.0%

Note. Each subscript letter denotes a subset of gamer categories whose column proportions do not differ significantly from each other at the .05 level.

Results

The one-way MANOVA was conducted to investigate gamer differences on a linear combination of life satisfaction and social skills. Participants were classified into three groups: casual gamers ($n = 42$), avid gamers ($n = 33$), and nongamers ($n = 57$). The

results of the omnibus MANOVA were significant $F(4, 258) = 3.377$, $p = .01$, Pillai's

Trace $= .100$. When the dependent variables were considered separately, the only

difference to reach statistical significance was life satisfaction, $F(2, 129) = 5.186$, $p =$

.007. The second research question inquired about social adaptation skills and whether

playing MMORPGs influenced these skills. The results indicated that there were no

significant differences in social skills among the three groups.

Before conducting post hoc testing, the homogeneity of variance assumption was

tested for all scales. Based on a series of Levene's F tests, the homogeneity of variance

assumption was considered satisfied, even though one of the two Levene's F tests was

statistically significant ($p > .05$), specifically the examination on life satisfaction. A

posthoc analysis (Fisher's LSD) was performed to examine individual mean differences

amongst the groups. The results uncovered that the posthoc mean comparisons were

statistically significant ($p < .05$). In two of the cases, the trend of the effect was linear.

That is, on average, casual MMORPG gamers appeared to have less life satisfaction than

avid gamers as well as nongamers. Whereas there was no statistical difference between

avid gamers and nongamers, as shown in Figure 1.

The results indicate in the pairwise comparison in Table 3 that the difference lies

between individuals who played 24 hours or less to 25 or more and between nongamers.

Further, when reviewing the results, although there is a difference between 25 hours or

more than 24 hours or less, there is no significant difference compared to nongamers.

Nonetheless, when comparing nongamers towards the gaming population, although there

is a considerable difference between nongamers and gamers who played 24 hours or less, there is no difference between individuals who played 25 hours or more. The pairwise comparison is presented in Table 3, highlighting the previously mentioned differences between the three groups.

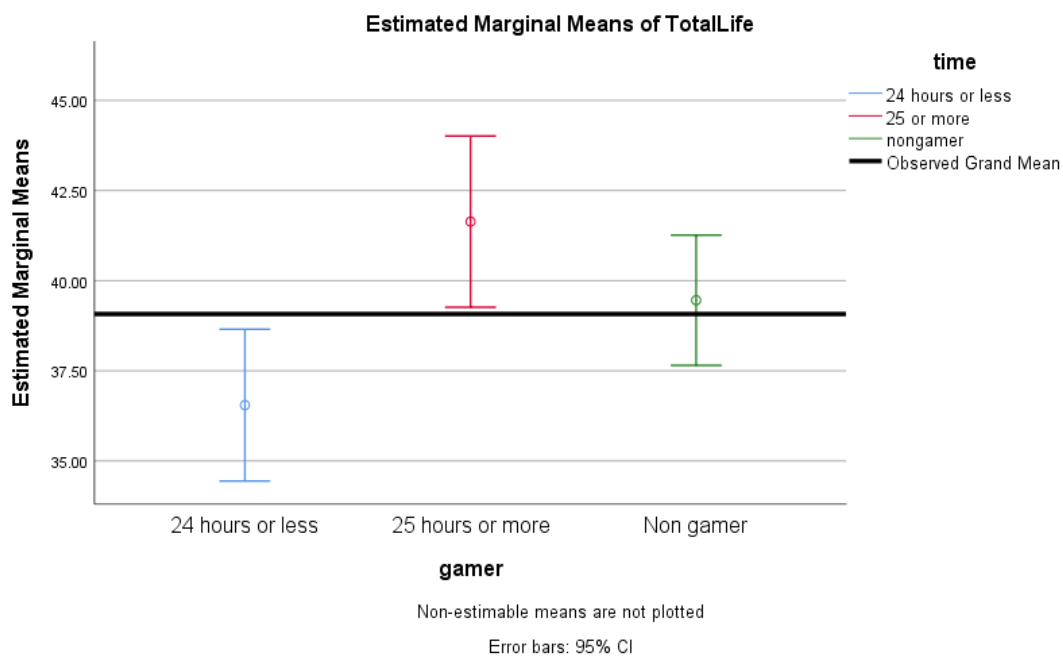Figure 1

Estimated Means of TotalLife

Table 3

Pairwise Comparison

Dependent Variable	(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.
TotalSocial	24 hours or less	25 or more	.4113	3.56186	.908
		nongamer	-3.4612	3.11375	.268
	25 or more	24 hours or less	-.4113	3.56186	.908
		nongamer	-3.8724	3.34931	.250
	nongamer	24 hours or less	3.4612	3.11375	.268
		25 or more	3.8724	3.34931	.250
TotalLife	24 hours or less	25 or more	-5.0887[*]	1.60384	.002
		nongamer	-2.9085[*]	1.40207	.040
	25 or more	24 hours or less	5.0887[*]	1.60384	.002
		nongamer	2.1802	1.50813	.151
	nongamer	24 hours or less	2.9085[*]	1.40207	.040
		25 or more	-2.1802	1.50813	.151

Summary

In Chapter 4, I reviewed the data analysis and results of this research. The results provided insight into the differences between the three groups. Further, I discussed the differences between social adaptation skills and life satisfaction skills. Overall, the results indicated that social skills were not based on the activity but on the individual. In addition, life satisfaction skills varied depending on the comparison group. Chapter 5 addresses the results, implications, limitations, conclusions, and recommendations.

Chapter 5: Discussion, Conclusions, and Recommendations

Bergstrom et al. (2017) and Boxer et al. (2015) revealed that society and media play a significant role in creating and maintaining negative and positive views on specific topics. These topics include video games, particularly MMORPGs. The quasi-experimental, postonly nonequivalent control group design used in this study addressed the differences in life satisfaction and social skills between MMORPGs casual gamers, avid gamers, and nongamers. The purpose of this research was to compare three specific populations. The populations included MMORPG gamers who played video games (e.g., casual gamers who played less than 25 hours per week and avid individuals who played MMORPGs 25 hours or more per week) and nongamers who did not play video games (e.g., individuals who do not play video games).

In this quantitative research, I reviewed the gap of life satisfaction and social adaptation skills amongst MMORPG gamers and nongamers to compare if an activity is an influencing factor of life satisfaction and social adaptation skill or is solely based on the individual. The key findings of this research indicated that social adaptation skills were not influenced by participating in MMORPGs. Nonetheless, the data showed significant differences between the three participating groups in life satisfaction, $F(2, 129) = 5.186$, $p = .007$.

Interpretation of the Findings

The one-way MANOVA that was conducted to investigate gamer differences on a linear combination of life satisfaction and social skills confirmed one of the hypotheses.

The independent variable was gamers, with three levels, 25 hours or less, 25 hours or more, and nongamer. The dependent variables were life satisfaction and social skills. The results of the omnibus MANOVA were significant $F(4, 258) = 3.377$, $p = .01$, Pillai's Trace = .100. When the dependent variables were considered separately, the only difference to reach statistical significance was life satisfaction, $F(2, 129) = 5.186$, $p = .007$.

The study participants were 25 or older, consistent with several previous researchers who indicated the players' ages range greatly (see Yee, 2005; Zhang & Kaufman, 2017). Further, Yee (2006a) and ESA's (2016) previous research indicated that most participants were male, but that the female population of gamers has been steadily growing over the last years. In the following sections, I discuss the theoretical framework and related literature. I also discuss the study's limitations, recommendations for future studies, and the implications for positive social change.

Theoretical Framework/Literature Review

The theoretical basis for this study was Diener's (1984) and Diener et al.'s (1985) pursuit of happiness. This theory highlighted the different paths people have taken to achieve overall well-being and life satisfaction and its influence on social relationships (Diener et al., 2017). Diener highlighted that happiness does not have one exact definition but that it is and has a culturally and philosophically diverse history. If his theory holds, happiness is what an individual creates in their life. Therefore, a subjective well-being

measurement was made. Diener (1984) suggested that there are three major components to an individual's well-being.

These include positive effects (pleasurable feelings), negative effects (painful feelings), and life satisfaction, such as assessing one's own positive and negative effects. Fugl-Meyer et al. (1991) built on Diener's pursuit of happiness theory by creating a questionnaire to highlight how an individual's personal view can affect well-being. This questionnaire was constructed because an individual's life satisfaction could be influenced by several additional factors, including physical health, hobbies, or social interactions. Fugl-Meyer et al. determined that neither gender nor age was a secondary factor in regards to happiness or life satisfaction as a whole. Taking this information from Diener et al. (1985) and Fugl-Meyer et al. into consideration, the influence of MMORPGs is dependent on the individual and not the MMORPG itself. Diener et al. emphasized that an individual and their surroundings could have influenced social relationships.

Data in this study appeared to be an indicator of how everyday life events and activities could potentially have influenced an individual based on the theories presented by Diener's pursuit of happiness and Fugl-Meyer's life satisfaction as a whole (Diener, 1984; Fugl-Meyer, 1991). Furthermore, the data highlighted differences between the gaming and nongaming populations in this study. It indicated that life satisfaction and social adaptation skills remain solely based on the individual and the influence activities have on the individual participant's lifestyle.

Life Satisfaction

I conducted a survey study to determine whether there were differences in life satisfaction between casual gamers, avid gamers, and nongamers (as measured by LiSat-11). Bowditch et al. (2018) reported that what one person may find ludicrous for an activity, another may find rewarding. Further, most people find themselves drawn to a form of escapism, but it is the usage of coping and adaptive skills that determine whether there will be an adverse effect of activity (Daneva, 2017; Gorlin et al., 2018; Kaye et al., 2017; Miron-Shatz et al., 2013).

Bowditch et al. (2018), Daneva (2017), and Gorlin et al. (2018) indicated rewarding aspects of gaming or other activities. Based on this study's results, I rejected my first null hypothesis because there was a significant difference between the three groups. The statistical significance was life satisfaction, $F(2, 129) = 5.186$, $p = .007$. Some factors have contributed to these results. First, more gamers ($n = 75$) than nongamers ($n = 57$) participated in the survey. Second, the gender ratio could have contributed to the results. There were significantly more males ($n = 80$) than females ($n = 53$) and one individual who did not identify their gender in this study.

Social Adaption Skills

According to the ESA (2016), the average gamer is over the age of 35; however, researchers have continued to focus on children and adolescents in their studies of problematical gaming and/or highly engaged gamers (Amialchuk & Kotalik, 2016; Bowman et al., 2012). Outside influencing factors such as environment and social status

were not considered when researching gaming behaviors (Greitemeyer & Osswald,

2010). Further, Griffiths et al. (2004) pointed out that adolescent gamers played longer

and were more likely to neglect essential responsibilities (e.g., school, chores). Griffiths

et al. highlighted that many adult gamers did not neglect their essential responsibilities

(e.g., work, family). Instead, gamers limited other leisure activities to create more time

for playing their video games.

Furthermore, I examined whether there were comparable social skills differences

between casual gamers, avid gamers, and nongamers (as measures by SASS). The data

collected highlighted and revealed that there were no differences between gamers and

nongamers regarding social skills. These results resonate with the description provided by

Charlton and Danforth (2007), which stated, " Exactly the same high degree of computer

use exhibited by two people might be considered either pathological or non-pathological

depending upon the impact that this has upon their life" (p. 1533). Previous researchers

have reported that a decrease in social skills occurred the more individuals participated in

MMORPGs (Boxer et al., 2015). Nonetheless, the data in this research study indicated

that social skills were not affected by playing MMORPGs.

Researchers conduct research to highlight and evaluate a potential hypothesis.

Some research focuses on the negative influence a situation or activity presents to an

individual and bases their research on the event and attitude formation (Castelli &

Carraro, 2011). A variety of factors can influence individuals and, in some cases, their

surroundings. It is not always solely based on the individual but the individual's entire

environment (Castellli and Carraro, 2011). Regardless if an individual was influenced by MMORPGs or other factors in their lives, it does not mean that their social skills or life satisfaction skills are negatively impacted through their activity of choice, such as playing MMORPGs (Bowman et al., 2012).

Daneva (2017) pointed out that social aspects and influences are diverse, especially for individuals who enjoy or participate in playing MMORPGs. Further, the impact on social adaptative skills and life satisfaction is subjective to the individual and not the population itself (Diener et al., 2018). Social-emotional well-being is a crucial factor in humanity and how humans interact with each other. Zhang and Kaufman's (2017) research asserted that social-emotional well-being is based on an individual and not the activity. This information coincides with Diener's subjective well-being theory, which spoke about actions that can contribute to social skills but are not the sole influencer of social skills (Diener et al., 2018).

After reviewing previous research, several indications asserted that playing MMORPGs over an extended period would negatively influence an individual's social adaptation skills (Gentile et al., 2017). However, previous research did not appear to consider older individuals but focused more on younger generations, such as children or adolescents (Boxer et al., 2015; Stoeber et al., 2011). After reviewing previous research and the data acquired, the results showed that playing video games could influence children and/or adolescents. However, based on the data collected in this study on older

adults, I failed to reject the second null hypothesis. There were no significant differences between any of the compared groups on the influence MMORPGs had on gamers.

Limitations

My research held some limitations about the gaming populations. The sample size collection of data was based on a total of 132 participants. Out of those individuals who participated, a total of 57 self-identified as MMORPG gamers and 57 nongamers. Nonetheless, even though the appropriate number of participants was used for this research, it does not reflect the overall population of gamers worldwide. According to the ESA (2020), the United States alone has 214.4 million gamers. Another limitation found was the discrepancy between the populations for this survey. This is not only a sampling bias but is a confounders bias; based on the research by ESA (2020), 79% of the US population was over 18 years of age. Even when making an estimated guess on removing the individuals that would not meet the criteria for this survey's population age of older than 25, one would still have at least 60% population playing video games. This survey was a mere fraction of the world's gaming populous.

Another limitation on life satisfaction and social adaptation skills in comparing MMORPG gamers and nongamers was the participant's overall well-being during the survey completion. Although life satisfaction was part of the collection phase of this research study, the participants' honesty during the time of completion could have been a factor in the results. Another limitation that was not addressed by this study but could have altered the outcome of the data collected was the participants' environment (e.g.,

socioeconomic status, physical and mental health) and how an individual's surroundings could profoundly impact (Albarracin & Handley, 2011). Individuals may allow peers or their environment to influence how they react or should react to specific situations (Li et al., 2011). Therefore, the last limitation was based on social desirability and self-reporting bias, as the participants may have chosen their answers based on what they thought the researcher would want to have versus what they might believe. Also, the participants' answers may have been the opposite of what was asked.

Recommendations

Based on the data and information collected throughout my survey, there are several recommendations for continued research. The first recommendation is to gather a more significant number of participants, thus gaining a more generalizable understanding of life satisfaction and social adaption skills when comparing MMORPG gamers to nongamers (e.g., why they play). Based on the ESA's (2020) research, at least 50% of gamers surveyed felt it improved their overall well-being. Therefore, finding a larger scaled population of gamers versus nongamers could show a difference in the effects of gaming versus nongaming concerning life satisfaction and social adaptation skills. Furthermore, as mentioned by the ESA (2020) and Gough (2020), there are several million players in the United States of American and the world's population of more than 2 billion. However, this study only gathered information from 132 individuals.

The second recommendation based on the data collected is to determine the individual's well-being and potential mental state before completing the survey to assess

their social desirability while participating in the study. However, to ensure the most honest opinions from participants, it would be advisable to add a socially desirable measure into the study. The final recommendation is intensively to increase the research based on comparing life satisfaction to nongamers, as the data indicates a difference among the groups, even the overall number of participants was small for this study. Weinstein (2010) had mentioned in his research that even with a smaller number of participants, certain influences of gaming could still be comparable to a larger population.

Positive Social Change Implications

Several social change implications are evident from the findings in my study. My study is designed to compare the difference between casual gamers, avid gamers, and nongamers based on the participants' perception of life satisfaction and social adaptability at the time of the survey (see Demetrovics et al., 2011). Despite video gaming almost being viewed as a blemish in societal circles, O'Connor et al.'s (2015) reported that not all gamers fall under the perceived notion of the negative image created. Although there is a negative stance towards individuals who play video games for a long time, previous research focused extensively on young adults under the age of 25, adolescents, and children (Amialchuk & Kotalik, 2016). However, there are many video games available; however, people appear to focus on one particular aspect of a video game's potential influence or another without making or finding a solid impact on one population or another (see ESA, 2020). The study by Griffiths et al. (2004) pointed out a difference between how gaming is viewed between the different age groups. Griffiths et al. pointed

out that the younger populations played significantly more hours than individuals over the age of 30. My study focused on adult gamers over the age of 25 and determined several social change implications.

The first positive social change implication is that well-being can influence life satisfaction. The first part of this study looked at the potential influence video gaming has (e.g., MMORPGs) on life satisfaction and the participants' overall well-being. According to Gorlin et al. (2018), anything that pertains to happiness or life satisfaction is based on the individual's state of mind. According to Deiner et al. (1985) and Fugl-Meyer et al. (1991), neither age nor gender influences life satisfaction, but there is a reported link to social interactions that influence life satisfaction. There was a significant difference in life satisfaction between the two of the groups in this study. The difference was between the casual and avid gamers. My research showed that avid gamers had greater life satisfaction than casual gamers. No significance was found in comparison to nongamers. This will be addressed in future research.

The positive information or influence on gaming appears to be overshadowed by the negative, including reduced social skills (Bowman, Schultheiss, & Schumann, 2012). The second positive social change implication shows that adults who play MMORPGs do not present with specifically negative issues regarding social adaptation skills. For example, previous research by Crowe and Bradford (2006), as well as DeWall et al.'s (2011), had indicated probable cause to believe that video game overuse could have been an influence on psychological well-being, including reduced social skills. Earlier research

asserted that virtual interactions in video games impeded individuals from excelling in everyday activities (Bergstrom et al., 2017). The results from my study did not show a lack in social adaptability skills in the adult gaming population compared to nongaming individuals. The results indicated that social adaption skills were similar and consistent across all three groups in this study.

The third positive social change implication is considering adult gamers as a separate population within the gaming community. Much research has been completed regarding video gaming and its potential influence on individual populations such as children, adolescents, and young adults under the age of 25 (Adachi & Willoughby, 2011; Kahn et al., 2015). Adults in the gaming world have significantly grown over the past several years (ESA, 2020; Yee, 2006). Nonetheless, adult gamers do not get mentioned as frequently in research as their younger counterparts (Williams, 2006). Further, much of the research does not include solely adult subjects or not enough to make a valid comparison. For example, Kasumovic et al. (2015) mentioned that the "typical" gamer is mostly assumed to be a young male. Even though my research focused on adult populations and the effects of life satisfaction and social adaptability skills, it also showed that the gender ratios were similar, especially in the gaming population. Overall, it would benefit to research and highlight the difference in adult gamers since the current results do not fall in line with previous findings, potentially changing the psychological view of the effect of video games.

Conclusion

My dissertation included samples of MMORPG gamers identified as casual (25 hours or less) and avid gamer (25 hours or more), and nongamers who do not play video games. My dissertation consisted of five chapters. Chapter 1 provides an overview of the study being conducted; Chapter 2 presents the relevant background literature, which sets the study's foundation. Chapter 3 describes the research methodology and its design, and Chapter 4 introduces the results. Finally, Chapter 5 presents the interpretations of my findings as well as recommendations for future research.

My study expands on the current knowledge related to influencing factors of playing MMORPGs. My quantitative study investigates MMORPGs' influence on an individual's life satisfaction and social skills compared to nongamers. The hypothetical questions for my research were whether there is a difference between casual, avid, and nongamers regarding life satisfaction and or social adaptation skills. The first research question's null hypothesis was rejected regarding life satisfaction while comparing the three individual groups. My research indicated that there is a significant difference between the different groups. However, this means that MMORPGs could influence individuals in other groups.

The second research question is interested in determining the difference in social adaptation skills among casual, avid, and nongamers. The data analysis determined that the null hypothesis was accepted, as there was no difference in social adaptation skills. Hence, MMORPG gaming does not influence social skills. The results revealed that

social adaption skills were not affected by MMORPGs but that it appears to be based on the individual and not their activity.

Summary

My dissertation included samples of online gamers who play MMORPGs and individuals who define themselves as nongamers, and it consists of five chapters. My study expands on the literature gap of influencing factors of life satisfaction and social adaptation amongst casual and avid gamers compared to nongamers. This quantitative study investigated overall well-being defined by life satisfaction (Diener et al., 2017; Fugl-Meyer et al., 2002) and social adaptability (Bech et al., 2002). The results reveal that gaming does influence life satisfaction. However, it does not change social adaptability skills, but the change is based solely on the individual. Such information is relevant to societal influencers, media, mental health providers, and developers of MMORPGs. My study's findings revealed insights into the psychological needs, gaming motivation, gaming behavior, and quality of life of online gamers. My study created a foundation for future studies in this field. Regardless of an individual's passion, hobby, or other activities, it is the individual who controls how his or her life is influenced. My study shows that, in the end, the individual is the key to his or her happiness, life satisfaction, and social adaptability.

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Appendix A: Demographics Questionnaire

1. What is your age?
    a. 24 and under
    b. 25 – 34
    c. 35- 44
    d. 45 – 54
    e. 55 – 64
    f. 65+
2. What is your gender?
    a. Male
    b. Female
    c. other
3. Current employment status?
    a. Fulltime
    b. Fulltime and a student
    c. Part-time
    d. Part-time and a student
    e. Unemployed
    f. student
4. Current relationship status:
    a. Single
    b. Married
    c. Divorced
    d. In a relationship
5. Religious Affiliation
    a. Christian
    b. Muslim
    c. Agnostic
    d. Atheist
    e. Other
6. Do you play Massive multiplayer online roleplaying games?
    a. No
    b. Yes
7. If you answered yes in the previous question, please answer the following:
   How many hours do you play per week?
    a. 24 hours or less
    b. 25 or more