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An Examination of Motives, Experiences, and Behaviors of MMORPG Players

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An Examination of Motives, Experiences, and Behaviors

of MMORPG Players

by

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Abstract

Massively multiplayer online role-playing games (MMORPGs) are growing in popularity and use worldwide. This study seeks to explore the motivations and experiences of MMORPG players through an extensive online survey with more than a thousand participants (n=1,422). The findings support a complex relationship between the variables, including the direct effects of motivations and flow on the time invested by players in MMORPG play, as well as the mediated effects of motivation via flow. Causal relationships are examined in addition to the significance of direct and indirect effects on frequency of play, yielding several significant results, including (1) the overwhelming importance of relationships as a motivation for MMORPG players, (2) the lack of motivation for manipulating players and elements of the game experienced by players, (3) the significance of achievement motivators when mediated by flow, (4) the significance of the direct effects of the mechanisms of flow (challenge, skill, and play) on MMORPG play behaviors, and (5) the recognition of the intricate network of connections between the variables in their effects on MMORPG players' habits.

Chapter One: Introduction

Overview

Video games are a multi-billion dollar industry across the globe, providing gamers with endless hours of entertainment and escapism through an array of game-types, ever-increasing graphics, and now, with the help of online consoles and advanced computer games, the ability to play competitively and collaboratively with players around the world. With more than 3 billion hours per week spent gaming internationally (McGonigal, 2011), it is clear that something is motivating gamers to pick up their controls and take to their keyboards to engage in this type of escape, and it is crucial to understand why so many seek out virtual worlds and what experiences drive them to keep revisiting them.

Massively multiplayer online role-playing games (MMORPGs) are the virtual successor of the tabletop games that saw their rise in the 20th century with Dungeons and Dragons. Modern MMORPGs take the concept of adventuring through a fantasy world and mix in advanced graphics, endless achievements, and the options of collaborative and competitive gameplay. These games allow players to craft and don virtual identities in an online fantasy world where they are able to take on new roles of their choosing outside the real-life social constructs that may be stigmatizing or limiting. MMORPGs also allow players to engage with other players in a virtual environment through these online identities where they can go on quests together, talk as themselves or as their characters, and build online relationships and social capital (Trepte, Reinecke, & Juechems, 2012).

Gamers spend countless hours engaged in these games, and many games require fees and subscriptions to play, constituting a sometimes-substantial financial investment in addition to the time and psychic energy gamers contribute each week to MMORPG play. Each game has specific mechanics, ideas, and roles for players to take on, and as these games grow in popularity and expand their capabilities, more and more gamers are testing out their skills in MMORPGs.

Statement of the Problem

Many studies have focused on the negative or addictive power of video games, despite the applicability of positive psychology. Studies throughout the end of the 20th and into the 21st century looked at harmonious and obsessive passion – an indicator for addiction – and experiences with flow (Wang, Khoo, Liu, & Divaharan, 2008), as well as the impact MMORPG play has on online and offline relationships (Utz, Jonas, & Tonkens, 2012). Additionally, motivations for MMORPG play have been analyzed in terms of addiction, problematic use, and in-game activities (Billieux et al., 2012; Suznjevic & Matijasevic, 2010; Wan & Chiou, 2007; Yee, 2006b). Flow – a framework that describes the components of an optimal experience of immersion where time falls away in place of enhanced concentration and enjoyment – has been applied to information technology since it was first described by Mihaly Csíkszentmihályi, and its popularity grew with the positive psychology movement in the 1980s and 1990s (Novak & Hoffman, 1997, July; Pilke, 2004).

To date, however no studies have attempted to combine motivations and flow in relationship to MMORPG play habits to illustrate a holistic picture of player experiences that includes both direct influences on time spent playing as well as the mediated influence of motivation via flow.

This study addresses the motivations gamers experience specific to MMORPGs, as well as the satisfaction and reward they receive. Frameworks of MMORPG-specific motivations (Yee, 2007), and conceptualizations of flow (Csíkszentmihályi, 1990; Novak & Hoffman, 1997, July) are used to create a structural equation model to establish the direct and indirect connections between the variables of motivation, flow, and MMORPG play. In addition to assessing the direct effects of motivation and flow on time spent playing, the mediated effects of motivation via flow will also be examined to establish a more holistic model of player motives and experiences.

Significance of the Study

This study's effort to create a more extensive and complex model for MMORPG players' intertwined motivations and experiences and their effects on play habits and frequency has not yet been illustrated in previous research. The impact of the specific MMORPG motivations developed through the Daedalus project (Yee, 2009) have yet to be assessed in terms of flow, despite the substantial data and validity used to create this set of descriptive and specific motivations. Additionally, Novak and Hoffman's (1997) three-channel model of flow has broad applications across information technology, including video games.

It is the goal of this study to illustrate the complex nature of MMORPG players' motivations and experience, and to create a more complete picture of these variables' influence on the investment of time players make concerning MMORPGs by examining the direct effects of motivation and flow on players' behaviors, as well as the mediated effects of motivations through flow on these behaviors. This study thus examines the causal relationship between the

motives that bring players' to their games, the experiences they have in-game, and how these

factors effect the amount of time players invest in MMORPGs.

Chapter Two: Literature Review

Games and MMORPGs

   The definition of gaming. Games have been a part of human society since the dawn of the civilized age. They serve as a proactive distraction that helps fortify concentration and sense of self, though it masquerades as time-wasting fun. The constructive nature of games dates all the way back to the 15th century B.C. when, as Herodotus writes in the beginning of *The Histories*, Atys, the king of Lydia, advised his people to play games such as mancala for one day to distract themselves from hunger, and then eat the following day. From this time of shortage and meagerness came dice, the ball, and other staples of games we play to this day (Herodotus, 440 B.C.E). This first reference to gaming as an escape shows how, even with the most basic of tools, games played for escapism can be productive and purposeful (McGonigal, 2011).

   All types of games from basic dice games to today's in-depth, high-graphics online video games have four defining characteristics, according to McGonigal (2011). A **feedback system** helps to keep the player or players engaged by letting them know how they are progressing in the game, and how their efforts are being rated. It gives an indication of when the game will end, and allows for competition to be heated and in-the-moment. **Rules** that provide guidelines that set the boundaries of the game, forcing players to be creative and strategic within this limited system. **Voluntary participation** ensures that all players are aware of the rules and feedback system, giving them common ground to play on. Through voluntary participation, players take on stressful and challenging gameplay in a bounded environment that brings them pleasure and engagement. Finally, **goals** define the specific outcome of the game that players deem desirable,

giving the activity a sense of purpose. Games of varying length have different kinds of goals for players to work towards – the final goal of completing the game, and smaller goals that are more immediate for advancement or remain entirely optional. The fact that players of any game take on goals and the inherent anxiety that comes with them voluntarily speaks to the pleasurable outcomes that motivate players toward multiple types of gameplay (McGonigal, 2011). All of these defining characteristics fall in line with flow theory, which will be discussed later in this chapter.

From the first text-based video games like *Zork* through the side-scrolling adventures of *Mario* into today's world of three-dimensional graphics and expansive worlds, video games have excelled in all of these categories to merge the basic concepts of games with technological advancements.

A brief history of video games. Gaming as a video-based medium did not begin until 1958 when William Higginbotham's Tennis for Two experiment debuted, demonstrating a control of interactive on-screen gameplay for the first time. The first true completed video game came in 1962 at the Massachusetts Institute of Technology with Spacewar! It is PONG, however, that the public largely remembers as the first video game. By the time Nolan Bushnell's paddle game became a fixture in arcades in 1972, Ralph Baer's Odyssey had become the first home-gaming system, and electronics and media companies were looking toward a future of consoles, cartridges, and controllers (Wolf, 2008).

In the 1970s and 1980s, companies including Magnavox, Midway, and Allied Leisure were producing videogames at such an alarming rate that the market crashed in 1977. This allowed giants Nintendo and Namco to develop their games, including the 1979 game *Puck-*

Man, which was later renamed *Pac-Man*, which was initially released in Japan and quickly made its way around the world to the United States, where it became a sensation (Wolf, 2008).

It was around this time that whispers of the Internet – the next step in information technology – began growing louder in military and scientific circles. Though both mediums were in their infancy, they seemed destined to interact (Kim & Weaver, 2002). In 1983. Chuck Miller created one of the first graphical games to be played across multiple network computers at the University of Illinois, and *Mines of Moria*, the first multiuser dungeon (MUD) was born (Kelly, 2004).

It wasn't until the 1990s that well-known franchises became fixtures in households. *Donkey Kong, Sonic the Hedgehog, Star Wars, The Legend of Zelda,* and *Super Mario Bros.* became prevalent across home console systems, while the home computer, ever-increasing in its ubiquity, gave developers a new platform to target with versatile capabilities and more adult usage. The development of the personal computer and increasing technology of the decade gave way to the first widely-played computer role playing games, which included Squaresoft's *Final Fantasy*, *Ultima,* and *The Elder Scrolls, Arena.*

Of course, the dawn of the 21st century heralded the rise of the internet as a day-to-day part of life. Its seemingly boundless capabilities kept expanding, making room and bandwidth for online gaming (Kim & Weaver, 2002). In 2002, Microsoft's first online gaming service debuted, and *Halo 2* became one of the most popular massively multiplayer online (MMO) games internationally. Cooperative play and communication spread throughout the gaming industry, and in 2004, Blizzard Entertainment unleashed the MMORPG *World of Warcraft*, which takes place in the same fictional universe as previous *Warcraft* strategy games (Boudreau, 2008; Kelly, 2004). By 2007, an estimated 9 million players engaged in *World of Warcraft*, showing the

success of the marriage between the Internet and video games worldwide (Boudreau, 2008). Today, *League of Legends, Final Fantasy XIV,* and *Guild Wars* dominate the MMORPG scene with open worlds, expanding options for character development, and ever-advancing missions and quests.

The modern MMORPG. The modern MMORPG has roots in role playing games inspired by J.R.R. Tolkien's *The Lord of the Rings: The Fellowship of the Ring* (1954). The first part of this saga showed the formation of the fellowship with nine diverse members, who all brought special skills and functions to the quest. This is the first image of a functional and potent adventuring party brought together to achieve a goal, and it serves as a model for parties in role playing games to this day (Tresca, 2010).

Role playing games have been closely tied to the literary genre of fantasy. The first widely-played tabletop role playing game – *Dungeons and Dragons* – was initially considered the epitome of interactive fantasy. Player interaction under a specific set of rules built unique experiences for each group of players who would develop their characters through encounters, triumphs, defeats, and weapons, keeping track on paper. In each organization, a player would take the responsibility of being the dungeon master and control the environment (Apperly, 2006).

Computer role playing games (CRPGs) were developed before the first widely adopted MMORPGs. In CRPGs (which are still popular today), players engage with the computer and work through a story while customizing characters and engaging in quests. In the 1980s and 1990s, it was assumed that these games would put an end to the socialization found in tabletop role playing games, as the computer took on the role of dungeon master. Instead, fan communities developed, most notably through websites and forums, where avid players would

create walkthroughs, communicate via message boards, and begin creating fan-made content that allowed CRPG games to live beyond their factory-developed mediated constraints (Apperly, 2006). Today, official game websites and fan-made pages host a wide range of media including fan-produced art and fiction, as well as discussions, analysis, and more to expand the enjoyment of games.

CRPG games are designed to be played by a single user who controls a character in a party or an entire party of characters as they move through the virtual environment and achieve various goals. CRPG games often include side quests in addition to a main storyline that motivates the plot and allows for in-game character development. The level of character customization in appearance, skill, and personality varies across games and game developers, but the sentiment is the same – users control some extent of character growth and development as a character or characters move through a story to its ultimate conclusion (Tresca, 2010).

Massively Multiplayer Online Role Playing Games (MMORPGs) keep more of their social tabletop role playing game roots than their solo-player counterpart, as they are built upon multiplayer use (Apperly, 2006). They are a combination of CRPGs and multiuser dungeons (MUDs) similar to *Mines of Moria*, with framework similar to *Dungeons and Dragons*. Since their humble beginnings, online video games have experienced a divergence in representational graphics (which may have assisted in solidifying gaming as a field, since it added diversity and showed growth). Graphical developments created a call for enhanced in-game abilities (Tresca, 2010). For instance, the rendering of water in-game created the request for swimming abilities. The call and response created more collaborative development of MMORPG games that have led to today's software capabilities. Though the dungeon master in this context is still played by the

computer (and game creators), player engagement with some MMORPG development created a much more collaborative development of these mediated environments (Tresca, 2010).

        Actions in MMORPGs. There are a plethora of actions one can take in an MMORPG, all of which shape the individual experience of the player. Based on the model of player motivations set forth by Yee (2007), Suznjevic and Matijasevic (2010) developed several action categories to describe the functions through which players progress based on the game's content. Their survey of 104 players and performance measurements discovered that these actions are fundamental across MMORPGs, and create broad definitions of actions, but do not include all the possible actions one can take across each MMORPG (Yee, 2007). These categories focus on those functions that allow players to progress in character level, power, and customization; and player social interaction and immersion in in-game culture. The categories, developed from a *World of Warcraft* case study, include:

- Trading: Trading can be conducted between two players, through an auction system, or with non-playable entities within the game, and entails the exchange of virtual items or currency. This is a simple process that requires little user input.
- Questing: A largely single-player activity, questing consists of solving tasks given by non-playable characters (NPCs) for experience and virtual goods for rewards. Questing is an important process for players as they gain levels through their avatar.
- Dungeons: Dungeons are often settings for combat between NPCs and small groups of players. Dungeons are replicated for each group of players and are isolated from the rest of the virtual world to eliminate disruption and help from

outside the group. In the context of individual games, the dungeon activity may not take place in an actual "dungeon" setting. The term dungeon can be applied to any open in-game setting where players can explore and engage in various types of combat.

- Raiding: Raiding includes fights between difficult, more advanced NPCs and large groups of players. These interactions are larger than dungeons with hither numbers of NPCs and players, thus increasing the complexity and requirement for social activity.

- Player v. Player combat (PvP): By its very nature, player v. player combat is a social activity. The complexity relies upon the skill and level of the players involved, and the number of players can range from two to hundreds. The prizes (experience and virtual goods) from PvP are more valuable than those yielded by questing, dungeons.

- Communication: Communication can take place during other activities, and serves as a gauge for how much time users spend socializing with others (Suznjevic & Matijasevic, 2010).

Modern MMORPGs and socialization. It is well documented that MMORPGs fill a need for socialization and build online and offline support (Trepte et al., 2012). Trepte, Reinecke, and Juechems found physical proximity to be conducive to bonding and building online social capital, while social proximity (common social elements) helps MMORPGs provide an in-game support network online bridging and bonding social capital. Both types pf proximity were shown through an extensive online survey of 811 international participants in

online sports games to build offline social support, showing that players who engaged in gaming with online and real-life friends had fortified their support network. Jansz and Martens(2005) also found that gaming allows players from different walks of life to meet in a unique setting, either in a virtual environment, or in real-life meetings to play cooperatively or competitively.

Players who participate in cooperative play will also have more opportunities to build in-game and offline social capital that create online and offline support. Social proximity (the commitment to the organization of the guild and non-guild activities), and physical proximity (the ability for gamers to socialize in real life), were both proven to have a positive impact on offline social support when players establish supportive and authentic relationships through their chosen game (Trepte et al., 2012).

McKenna, Green, and Gleason (2002) argue that online relationships function with superior quality when founded upon openness about identity, and that those who are shy and have a desire to be social may be able to communicate better through mediated platforms (Sheeks & Birchmeier, 2007). This can easily be applied to online games such as *World of Warcraft,* which employs various types of asynchronous and synchronous communications from game to game, which can include a combination of on-screen live chats (similar to instant messaging or chat rooms within the game), and voice chats while playing to coordinate efforts in the virtual world (Blizzard Entertainment).

Theoretical Framework

MMORPG-specific player motivations. The development of the Gaming and Motivation scale did help validate the connections between player motivations (through the framework of self-determination theory) and behaviors, the specific motivations of MMORPG

players were left largely unexplored before the research of Yee (2006) (Lafrenière, Verner-Filion, & Vallerand, 2012). The subject pool consisted of players that engaged in more than 25 different games, only some of which were MMORPGs. In response to this lack of genre-specific knowledge, Yee (2007) revealed a five-factor model of MMORPG user motivations through analysis of an extensive three-year survey. The motivations uncovered include immersion, escapism, manipulation, achievement, and relationships

Users who enjoy the **immersion** factor enjoy the context of a fantasy world and assuming another identity. They engage in the narrative of the game and often create avatars with deep histories that tie in with the mythology of the virtual world. The concept of immersion includes discovery, or the finding of new places or things that other players are unaware of; role-playing, or the creation of a rich persona and interacting with other players to develop an improvised and unscripted story; and customization, referring to the interest in customizing the appearance of the character.

Immersion is closely related to **escapism**, or the inclination to engage in MMORPG gameplay to avoid real-life stressors and issues. The escapism offered by the game allows the player to temporarily forget about his or her problems ion reality and focus on the game instead. This gives the player a new set of tasks and readily achievable goals to engage in, thus offering a sense of satisfaction not currently available in their real-life circumstances (McGonigal, 2011).

The **achievement** factor refers to the desire to become more powerful within the game relates to the achievement factor. The leveling system offered by MMORPGs allows players to gain experience points and make the base of their character more powerful, while engaging in trade and varying types of missions and activities may yield advanced weapons or in-game currency to purchase weapons with, thus allowing the player options in making a more powerful

character. Though this is a strong motive, it has been shown that motives such as teamwork and the urge to discover and explore (Billieux et al., 2012).

Achievement can refer to advancement, referring to the desire to gain power, progress in the game, and accumulate in-game currency and status; mechanics, which refers to an interest in analysis of game mechanics to optimize performance; and *competition*, which refers to the desire to compete with others, relating back to the activity of player vs. player combat (Suznjevic & Matijasevic, 2010).

Achievement and **manipulation** go hand-in-hand, since some players seek achievement and satisfaction through manipulating other players. In an MMORPG context, this refers to the inclination of the user to objectify other players in-game and manipulate them for personal gains (Yee, 2006b).

The **relationship** component refers to the interactions and relationships built between gamers during gameplay. This includes socializing, including casual chatting, assisting others in-game, and making friends. It also includes teamwork, which is an integral part of MMORPG gameplay. This can involve collaborative activities, such as trading, raiding, and dungeons that yield group achievements. Those motivated by relationships experience a desire to interact with other users and a willingness to invest emotions and energy in the formation of supportive, meaningful relationships that include discussion of real-life issues. It has been shown that, when MMORPG games are approached with a healthy level of harmonious passion (which ensures the gamer is able to engage in MMORPGs voluntarily and without allowing it to interfere with real-life), then supportive and mutually beneficial relationships within the game are possible without having a negative impact on offline relationships (Utz et al., 2012; Vallerand et al., 2003).

Yee's conceptualization of motives for MMORPG gamers was based on a large volume of data from the Daedalus Project and was developed through several quantitative and qualitative studies. Yee notes that the integrity of web-based survey studies is well-established, since participants are highly motivated and self-identify. Several online surveys of MMORPG gamers, resulting in around 30,000 participants over the course of three years resulted in the formation of an empirical model of MMORPG player motivations, as well as a set of questions to serve as a scale for the foundation of further inquiry (Yee, 2006a; Yee, 2006b; Yee, 2009). In addition, Billeaux et al. (2013) monitored nearly 700 avatars in World of Warcraft and compared in-game actions to survey results exposing motives of the players as laid out by Yee. These relationships, such as exploration and discovery's positive relationship with questing, prove Yee's model for motives of online play and in-game actions adequately depicts the experiences of MMORPG players.

Positive psychology. Where self-determination theory seeks to explain actions, positive psychology looks to shape actions and experiences. The goal of positive psychology as a whole is to study and evaluate the ways in which individuals and communities thrive and create meaningful experiences. Instead of focusing solely on mental illnesses and abnormal psychology, positive psychology deals with the mental processes and activities that yield happiness and fulfillment.

Despite the focus on negative effects of video games and MMORPGs, such as social withdrawal and addiction, gaming creates a very positive, structured, and enriching experience for players. Its promised productivity and goal achievement gives players something to do, specific actions to take, and guaranteed rewards (Lyubomirsky, 2008).Upon completing quests in

MMORPGs, players are given rewards that are valuable in their virtual world, and are given the opportunity to complete more structured quests that promise clear steps to achieving a goal, which, in this environment, is its own reward (McGonigal, 2011).

If understanding the motives for challenging, sometimes stressful work is important to grasping human behavior, then exploring the motives behind voluntarily taking on such tasks is crucial to grasping and optimizing the human experience (Deci & Ryan, 2009). Designers of video games craft virtual worlds that not only entice gamers to play initially, but keep them engaged and playing for hours on end. The constant system of challenge and reward builds a satisfying cycle for gamers, allowing them to willingly engage in a cycle that has the promise of reward, and thus happiness and satisfaction (McGonigal, 2011).

Though the idea of seeking and creating happiness is not new, it has become intertwined with self-help and self-creating happiness. A flaw, according to Weiner, is that the trend of self-help has taught individuals to seek happiness inwardly, instead of looking to their communities and human social bonds for fulfillment (Weiner, 2009). Approaching happiness collectively via socialization helps to explain some of the positive effects that MMORPG gameplay has on a number of users. Maintaining engagement through challenging and evolving tasks and virtual settings in a social environment helps to generate a positive mindset conducive to experimentation without severe consequences in reality. This allows players to try our various actions, interactions, and habits within the context of the game (McGonigal, 2011).

At the heart of positive psychology is the reinvention and optimization of experiences in life as a whole, and the concept that happiness is not only felt in relaxed times of leisure. The idea that happiness and immersion is yielded by a balance between challenge and skill in an activity has been best conceptualized by Mihaly Csíkszentmihályi in flow theory.

Flow. In the simplest terms, flow refers to an optimal experience of complete immersion in an activity that challenges the individual without becoming frustrating and causing anxiety. Csíkszentmihályi (1990) describes the psychology of this experience extensively, calling it a condition for which people must prepare, cultivate, and defend privately through the control of inner circumstances and experiences. He notes that flow is not chiefly produced by calming and relaxing activities, though these experiences are certainly enjoyable. Moments of flow occur when a person's body or mind are pushed to its limits voluntarily in an activity that the individual deems valuable and worthwhile (Csíkszentmihályi, 1990).
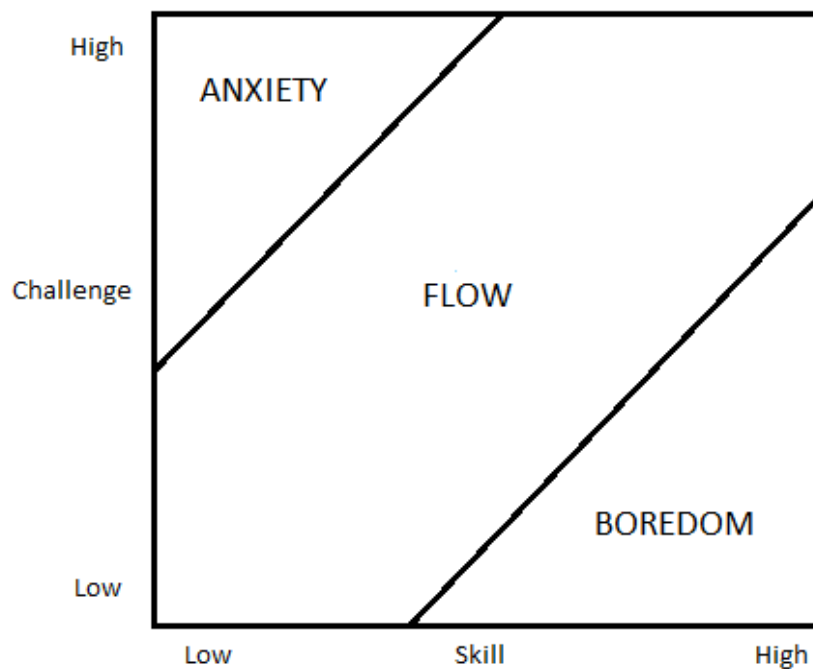
Figure 1: Three-channel model of flow (Novak & Hoffman, 1997)

Flow theory is a part of the positive psychology movement that focuses in the experiences and actions that fortify the self and support proactive growth. By its very nature, simply seeking flow experiences allows an individual to take action for his or her positive

psychological health, as this Zen-like and unified state of consciousness inherently reinforces one's sense of self-efficacy and identity (Csíkszentmihályi, 1990).

While work, physical activity, and time spent with others can all be conducive to flow, many individuals do not focus on activities that bring them happiness, thus ignoring the rewards of work and wasting free time on activities that are less engaging of the consciousness (Csíkszentmihályi, 1990). The fact that video games are designed for leisure enjoyment and activity helps to create a perfect storm of immersion that often creates a rewarding and sometimes addicting experience for players (Kelly, 2004; Pilke, 2004). Flow theory states that rich sensory experiences help to create rewarding experiences for individuals. Since video games serve as an intersection of all forms of storytelling, they create an ideal medium for the creation of flow experiences. Games also allow individuals to exert agency in a virtual environment, fulfilling one of the major requirements of flow and the basic need for competence (Csíkszentmihályi, 1990; Deci & Ryan, 2009).

Flow does have its pitfalls when it is related to gaming, however. There is a conflict between the desire to spend time with other people and engage socially, and the need for time alone and privacy. Though many often crave solitude, most individuals have a propensity to become depressed and aimless when away from others. This is why the ability to create flow experiences when alone is often a trait of those who are successful in creative endeavors (Csíkszentmihályi, 1990). However, the interaction between the internet and gaming technologies to produce social gaming allows for different kinds of social interaction and enjoyment of relationships while an individual experiences the game in relative solitude, thus allowing new types of interactions to fill various needs and desires (McGonigal, 2011; McKenna, Green, & Gleason, 2002).

There have been various conceptualizations of flow. The seven components of flow identified by Csíkszentmihályi serve as framework for additional conceptualizations, as Csíkszentmihályi acknowledges that the presence of all elements is not necessary for a flow experience. These components, called *elements of enjoyment*, are applicable to a variety of settings and activities, as the sensation of enjoyment is experienced in much the same way by all humans. The components and their relationship toward video games are as follows:

- **A challenging activity that requires skills** – activities that elicit flow must be challenging enough to require concentration. Competitive activities, including combative social play in an MMORPG context, are excellent conductors of flow.

- **Merging of action and awareness:** The fluidity of action and awareness refers to the individual experiencing a *oneness* with his or her activity. A person's relevant skills are called upon to cope with and address the situation being presented, allowing them to become absorbed into the activity. In the setting of video games and MMORPGs, this can translate into a lack of thought towards the controls within the game and a sensation of being immersed in the action and story being presented.

- **Clear goals and feedback:** A feedback system that is immediate and easy to understand helps players to assess the nearness of goal completion and their current progress. The mechanism of feedback or type of feedback is less crucial than the symbolic message that states whether the individual is succeeding or failing at his or her goal. Feedback systems built into video games (and multiple types of information technology) provide data to players that helps facilitate informed decisions, and is conducive to the merging of action and awareness when clear and concise. However, when the feedback system lacks clarity, it can be disruptive and distracting (Pilke, 2004).

- **Concentration on the task at hand:** According to Csíkszentmihályi, unwanted and unproductive thoughts and concerns brought on by a lack of immediate tasks and concerns that provide structure in free time can help improve experiences and banish the negative affect of disorder. Since video games, as Pilke says, are designed to create flow, they are able to impose order through their internal functional framework and provide tasks and goals for the user. MMORPGs are especially capable of this, as repeating tasks still yields in-game rewards for the player, providing greater in-game literacy and fluidity, and allowing for more opportunities to remain concentrated on a singular or similar task (Rosenberg, 2011).

- **Paradox of control:** Flow experiences in enjoyment differ from those in reality. Csíkszentmihályi explains that an individual failing in a game differs greatly than one working to keep their job. The sense of control in enjoyment activities designed to create flow is contingent on exercising control in challenging situations, not simply being in control. In video game settings, players are able to take risks that are unavailable, unrealistic, or inadvisable in reality, thus allowing gamers to experience a variety of setting while exercising control in the situation and taking minimal risks.

- **Loss of self-consciousness**: While experiencing flow, individuals often experience a loss of self-consciousness due to focus on their chosen activity (Csíkszentmihályi, 1990). With no attention or psychic energy available to consider real-life issues or concerns, self-consciousness becomes irrelevant stimuli. Through this experience and loss of sense of self through oneness with the activity, the sense of self can be fortified within the individual when the flow experience is terminated.

- **Transformation of time**: The sense of time experienced while in a flow state may be altered. Individuals can experience a slowing of time while in a flow state, but may experience the opposite when emerging from the flow state. This provides mental freedom from the constraints of time. Within video game settings, the immersion and altered time within the virtual world may also distort the player's subjective experience of time passage. Gamers often report playing longer than intended or anticipated due to a lack of awareness of physical time (Hussain & Griffiths, 2009). This can be facilitated by the inherent characteristics of MMORPGs, including multiplayer interaction and the complexity of multiple levels and settings (Wood, Griffiths, Chappel, & Davies, 2004; Wood et al., 2007; Wood, Griffiths, & Parke, 2007).

In an examination of gaming which treated flow as the optimal result and manifestation of gaming literacy, Rosenberg (2011) recognized the consistency of elements of challenge, skill, and play across multiple conceptualizations of flow as he developed a standardized measure of video game literacy built upon Novak and Hoffman (1997)'s conceptualization of flow developed from existing scales related to flow experiences. Novak and Hoffman's (1997) survey items were developed through extensive survey testing to narrow down the validity of various concepts of flow in Internet usage, and have strong correlations with the basic aspects of flow outlined by Csíkszentmihályi.

The element of **challenge** refers to an activity that draws from one's psychic energy and requires the individual to remain focused and cognizant. In order to create a flow state in gaming, the challenges presented must place the player in a channel between boredom and anxiety where concentration is rewarded with a sense of exercising control in the setting rather than being in control. The **skills** of the gamer must have been developed sufficiently by their prior experiences

in the game and by their general gaming literacy to allow them to meet the challenges presented (Rosenberg, 2011). The level of challenge and skill must remain balanced to keep the player in a position to exert control with awareness without becoming overly frustrated and anxious. Finally, the element of **play** is best conceptualized as the attitude toward gaming, in which the gamer is engaged and not indifferent toward the tasks of the game (Csíkszentmihályi, 1990).

Information technology, including video games have been shown to produce flow experiences more frequently than work, since players engage with an attitude of interest and play(Novak & Hoffman, 1997, July). Pilke (2004), through a series of in-depth interviews, found that flow experience is frequent across various forms of technology, including programming, word processing, and visual design, noting that good user interface design and usability are major components in contributing to flow experiences. As video games are designed to induce a pleasurable, immersive experience, they are some of the most potent inducers of flow. Since a primary principle of games as a whole is that they are taken on voluntarily, it is implied that involved gamers experience concern and care toward their own gaming behaviors (McGonigal, 2011).

Relationship between flow and motivation. It has been well-established that different types of motivation can impact the use of MMORPGs and the experience gamers have while playing (Suznjevic & Matijasevic, 2010). Significant, though scattered, research has begun to draw connections between MMORPG gamers' attitudes, motivations, actions, and experiences with gaming, and with the intersection of gaming and reality (McGonigal, 2011).

Gamers' attitudes towards gaming and reasons for MMORPG use have been shown to have impact on relationships both online and in daily life, illustrating a link between the relationship with gaming and with real-life experiences (Utz et al., 2012). MMORPG addiction,

which can have severe negative impact on gamers' lives, MMORPGs can be predicted and assessed through several critical factors of curiosity, role-playing, belonging, obligation, and reward that players experience (Hsu, Wen, & Wu, 2009). These findings show the connection between the internal psychological and emotional conditions of gamers is of significant consequence to both gaming and reality.

Gamers' motivations for play have also been proven to have real impact on in-game experiences and actions. Self-reported motivating factors such as achievement, socialization, and immersion have been shown to impact in-game behaviors of players, and the length and frequency of gameplay based on avatar monitoring (Billieux et al., 2012). Different types of motivation can lead gamers to adopt varying gameplay patterns, including the actions described by Suznjevic and Matijsevic (2010).

Since these factors can be so inextricably linked to in-game behaviors, it stands to reason that the various components of flow – all of which do not have to be experienced to constitute a flow experience (Csíkszentmihályi, 1990) – are linked to varying motivational components, as the motivation to play precedes the actual experience of playing temporally. Players must first be motivated to engage in gameplay in some way, and their experience and attitude towards playing – and therefore the overall time investment they are willing to make towards further play – are influenced by their internal experience while playing. These experiences are described and defined by the "optimal" experience of flow. When these motivations impact flow, which in turn impacts overall MMORPG play, these motivations are mediated through the flow experience. Therefore, this study will focus on exploring the connections and causal links between the components of flow as described by Csíkszentmihályi (1990) and the MMORPG-specific motivations explained by Yee (2007).

The relationship between flow and the use of technology is perhaps best and most simply defined by Pilke (2004): "Flow can and often will be induced by the thrill of communication, reading or writing that directly relate to the users intrinsic goals. (354)" If flow experiences can be created by information technology that seeks to entertain, and engage users, should not the element of communication create a more powerful tool to create immersive experiences?

The present study examines the direct effects the internal states of flow and motivation on MMORPG gameplay, as well as the mediated effects of motivation (the factors that lead a player to engage in MMORPGS) through flow (the experiences had while in-game). The survey used to measure these experiences is geared specifically towards MMORPGs, using the MMORPG-specific motivations developed by Yee (2006) and the elements of flow and internet usage developed by Novak and Hoffman (1997) adapted to suit the activities of MMORPG gamers.

Chapter Three: Research Hypotheses

Structural Equation Model
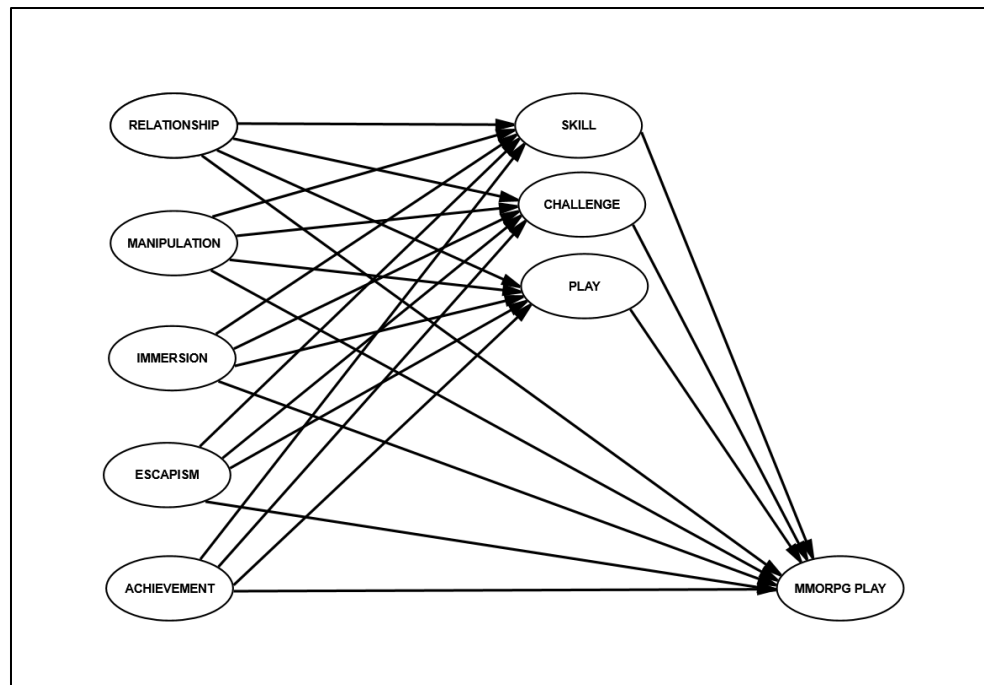
Figure 2: Hypothesized Structural Equation Model

Figure 2 shows the hypothesized paths among the variables of motivation and flow as they impact MMORPG play. Each relationship is shown with arrows indicating the hypothesized connection, including the direct connection between motivation → MMORPG play, flow → MMORPG play, and the mediated effects of motivation → flow → MMORPG play. Established scales were selected to assess each individual component of motivation, (relationship, manipulation, immersion, escapism, and achievement), and each mechanism of flow (skill, challenge, and play). Additional questions concerning the amount of time spent engaged in

MMORPG games under varying circumstances (traditional week, vacation week, etc.) were selected to assess the component of MMORPG play.

Hypothesized Paths

As established in the literature review and shown in the above figure, motivation and flow are two separate constructs that are related to aspects of MMORPG play. Both have a direct influence on MMORPG pay habits, and can thus have a direct influence on the players' experiences and habits, which can be simply indicated by the amount of time players are willing to invest in gameplay.

Since the motivation to play MMORPGs must precede the actual act of playing (assuming players are engaging in MMORPG play of their own free will and without coercion), this model hypothesizes that motivation is mediated by flow. This model shows both the direct effects of motivations as well as their mediated effect as they work through flow in impacting MMORPG play, implying both a direct and causal relationship.

In order to assess the validity of this model, three models will be tested – one considering both the direct and mediated effects of the motivations in addition to the direct effects of flow, one considering only mediation, and the third accounting for only direct effects. In this way, we can determine which model provides the best fit for the data, and which best explains the connections between the variables and MMORPG play.

The following constitute the three sets of hypotheses this study aims to address. These include the paths of the direct effects of motivation on MMORPG play, the direct effects of flow on MMORPG play, and the indirect (mediated) effects of motivation on MMORPG play.

Table 1: Research Hypotheses

H1: Motivations have a direct effect on time spent playing.	
H1-a	Relationships have a direct effect on time spent playing (Relationships → MMORPG Play)
H1-b	Manipulation has a direct effect on time spent playing (Manipulation → MMORPG Play).
H1-c	Immersion has a direct effect on time spent playing (Immersion → MMORPG Play).
H1-d	Escapism has a direct effect on time spent playing (Escapism → MMORPG Play).
H1-e	Achievement has a direct effect on time spent playing (Achievement → MMORPG Play).
H2: Flow experiences have a direct effect on time spent playing.	
H2-a	Skill has a direct effect on time spent playing (Skill → MMORPG Play)
H2-b	Challenge has a direct effect on time spent playing (Challenge → MMORPG Play).
H2-c	Play has a direct effect on time spent playing (Play → MMORPG Play).
H3: The effects of motivations on MMORPG play are mediated by the experiences of flow.	
H3-a	The effects of relationship motivations on time spent playing are mediated by the experiences of skill (Relationships → Skill → MMORPG Play).
H3-b	The effects of relationship motivations on time spent playing are mediated by the experiences of challenge (Relationships → Challenge → MMORPG Play).
H3-c	The effects of relationship motivations on time spent playing are mediated by the experiences of play (Relationships → Play → MMORPG Play).
H3-d	The effects of Manipulation motivations on time spent playing are mediated by the experiences of skill (Manipulations → Skill → MMORPG Play).
H3-e	The effects of Manipulation motivations on time spent playing are mediated by the experiences of challenge (Manipulations → Challenge → MMORPG Play).
H3-f	The effects of Manipulation motivations on time spent playing are mediated by the experiences of play (Manipulations → Play → MMORPG Play).
H3-g	The effects of immersion motivations on time spent playing are mediated by the experiences of skill (Immersion → Skill → MMORPG Play).

Table 1 (Continued)

H3-h	The effects of immersion motivations on time spent playing are mediated by the experiences of challenge (Immersion → Challenge → MMORPG Play).
H3-i	The effects of immersion motivations on time spent playing are mediated by the experiences of play (Immersion → Play → MMORPG Play).
H3-j	The effects of escapism motivations on time spent playing are mediated by the experiences of skill (Escapism → Skill → MMORPG Play).
H3-k	The effects of escapism motivations on time spent playing are mediated by the experiences of challenge (Escapism → Challenge → MMORPG Play).
H3-l	The effects of escapism motivations on time spent playing are mediated by the experiences of play (Escapism → Play → MMORPG Play).
H3-m	The effects of achievement motivations on time spent playing are mediated by the experiences of skill (Achievement → Skill → MMORPG Play).
H3-n	The effects of achievement motivations on time spent playing are mediated by the experiences of challenge (Achievements→ Challenge → MMORPG Play).
H3-o	The effects of achievement motivations on time spent playing are mediated by the experiences of play (Achievement → Play → MMORPG Play).

Chapter Four: Methodology

Sample

The sample consisted of 1,422 individuals (1,219 males, 187 females, 8 transgender, and 8 undisclosed). Their average age was 21.9 7 (SD=5.35), which is only slightly lower than the average age of 26 reported by the Daedalus Project . Since approximately 85% of all MMORPG players are male, the sample collected is very close to being representative, based on those who disclosed their gender (Yee, 2009). The average amount of time participants claimed they spent playing per day during an average workweek was 2.1 hours (SD=1.01) and 2.59 hours per day during vacation time (SD=1.16). 23.3% of respondents claimed addiction to MMORPGs, indicating that nearly a quarter of participants recognized problematic usage. Participants were recruited through social networks. The majority of respondents were recruited from MMORPG-related forums on Reddit (www.reddit.com) and self-selected. All respondents were recruited between January 19, 2014 and February 7, 2014.

Survey Instrument

The survey questionnaire was drawn from established instruments designed to measure MMORPG motivations (Yee, 2006a) and flow with technology use (Novak & Hoffman, 1997, July). Slight alterations to the items in each scale were made to suit the immediate purposes of this study, and were reviewed by all researchers. Additionally, demographic questions from Yee's 2007 study were incorporated into our survey.

The questionnaire consisted of 34 Likert-scaled questions that referred to players'

motivations to engage in MMORPGs and their experiences with immersive elements of

challenge, skill, and play. Following these questions were 19 questions concerning

demographics, play habits, and experiences. Three questions concerning the prevalence of

MMORPG play time were used to quantify MMORPG behavior (survey items can be found in

Appendix A).

The following describes the two key measures used in the survey. All items on the final

survey were developed and adapted from these measures, if not used verbatim from the original

measures.

MMORPG motivations. Items from Yee's (2006) study on motivation and experiences

refer to the five factors of MMORPG motivation. Additional items from the original

questionnaire were eliminated to reduce the burden on participants. Responses to these items

were recorded using a 5-point Likert scale (1-strongly disagree, 3- neutral, 5 – strongly agree).

The five-factor structure of MMORPG motivation was tested through SPSS AMOS 22.0

confirmatory factor analysis. Results (shown in Figure 3) indicated that the model provided

acceptable fit (CFI=.899) to the data (Bentler & Bonett, 1980). However, the regression weight

of one item (M2: I beg for money or items in the game) was relatively low (.22). The model

showed significant improvement in goodness-of-fit by dropping the item (CFI=.904), as shown

in Figure 4. The revised model was thus retained and used in all subsequent data analysis.
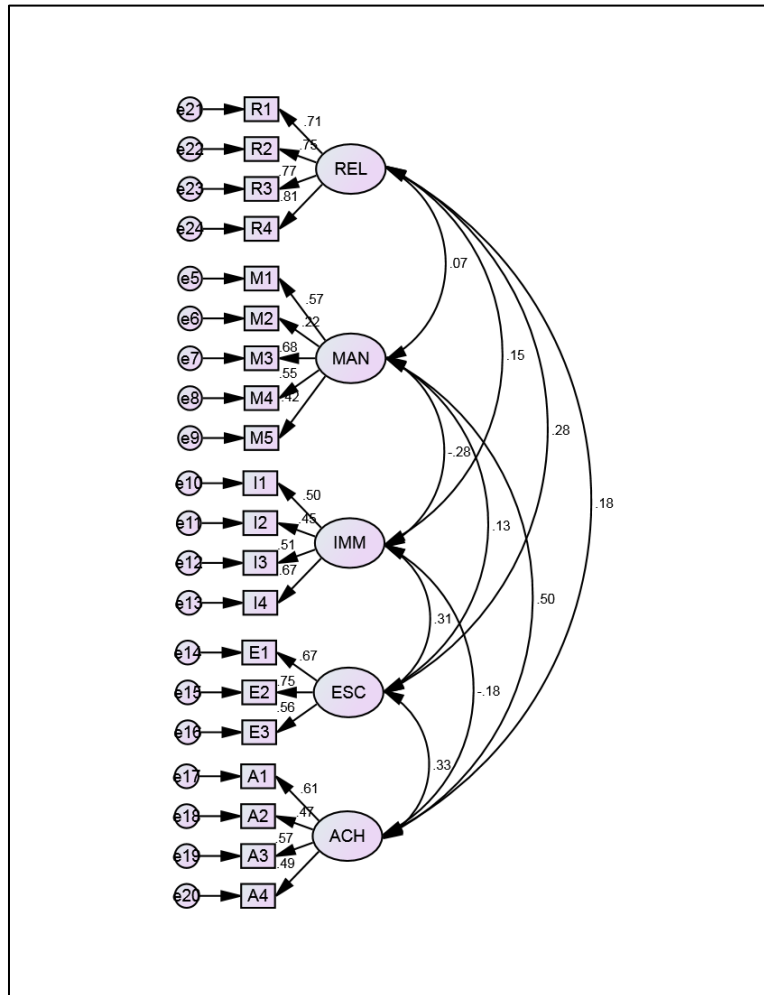
X²(160, N=1389)=741.836, p=.000; CFI=.899, NFI=.875, RMSEA=.051
Figure 3: Confirmatory Factor Analysis (Motivations).

Flow. Novak and Hoffman's (1997) model for flow in human-computer interaction was used to assess flow-related elements of skill, challenge, and play grounded in Csíkszentmihályi's theory. As Rosenburg (2011) proposes, additional items from this instrument measuring converse components of the eight-channel model of flow will not be used, due to their length and low correlative value. The scale was adapted for MMORPGs and, like the original, used a 7-point Likert scale.
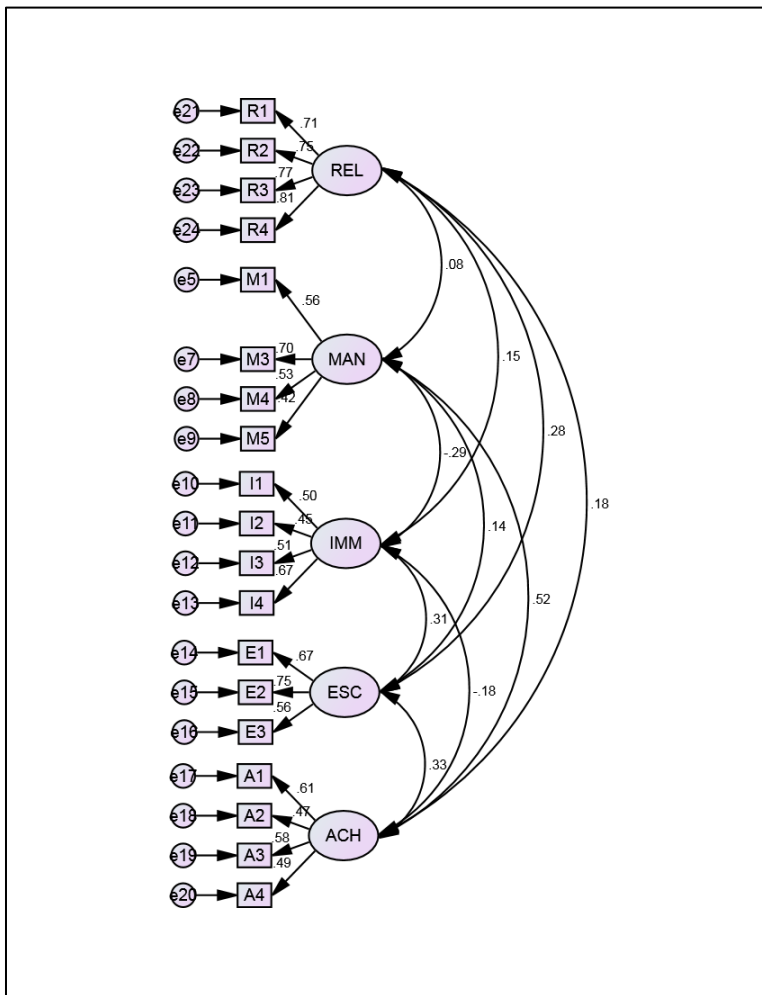
X²(142, N=1389)= 682.121, p=.000; CFI=.904, NFI=.883, RMSEA=.052
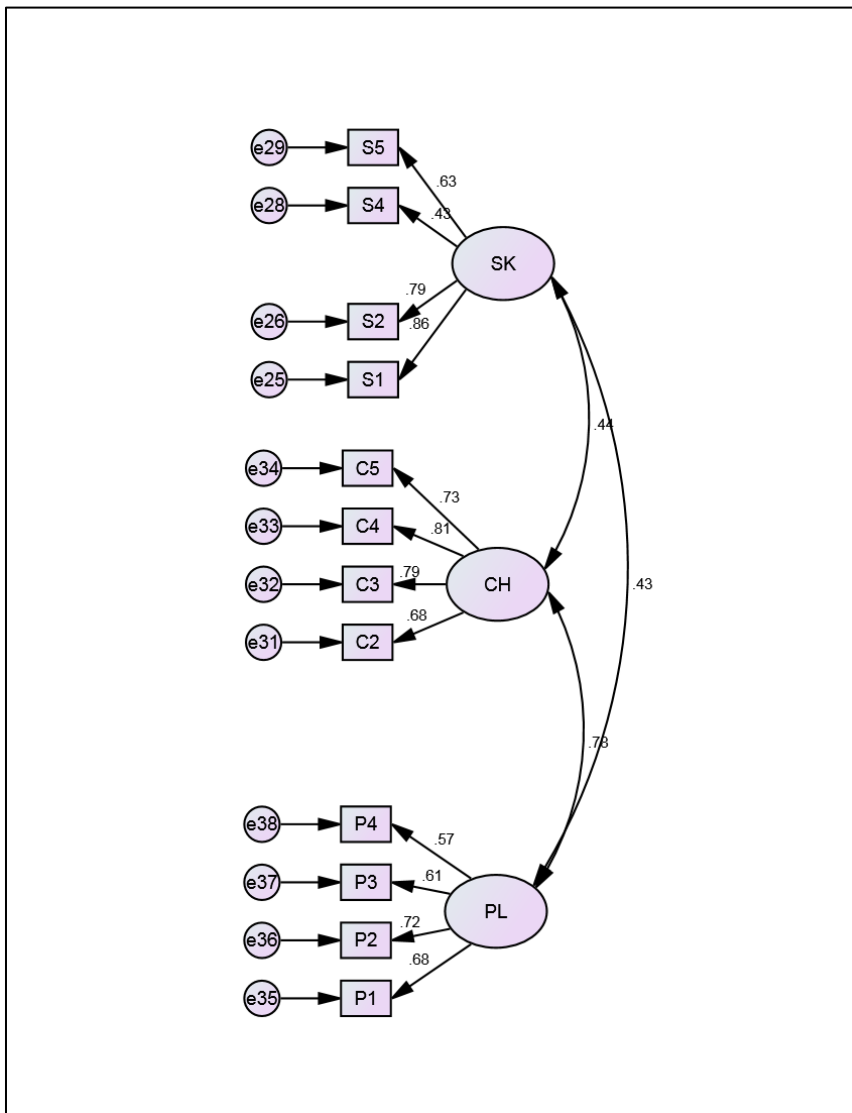**Figure 4: Revised Confirmatory Factor Analysis (Motivations).**

Confirmatory factor analysis results (Figure 5) indicated that two items (S3: I know less about MMORPGs than most players, and C1: Mastering a MMORPG is easy for me to do) showed very low regression weights (.21 and .19), resulting in an overall low goodness-of-fit (CFI=.838). Dropping these two items resulted in significantly better fit (CFI=.949), as shown in Figure 6. All further analysis was thus based on the revised three-factor structure.
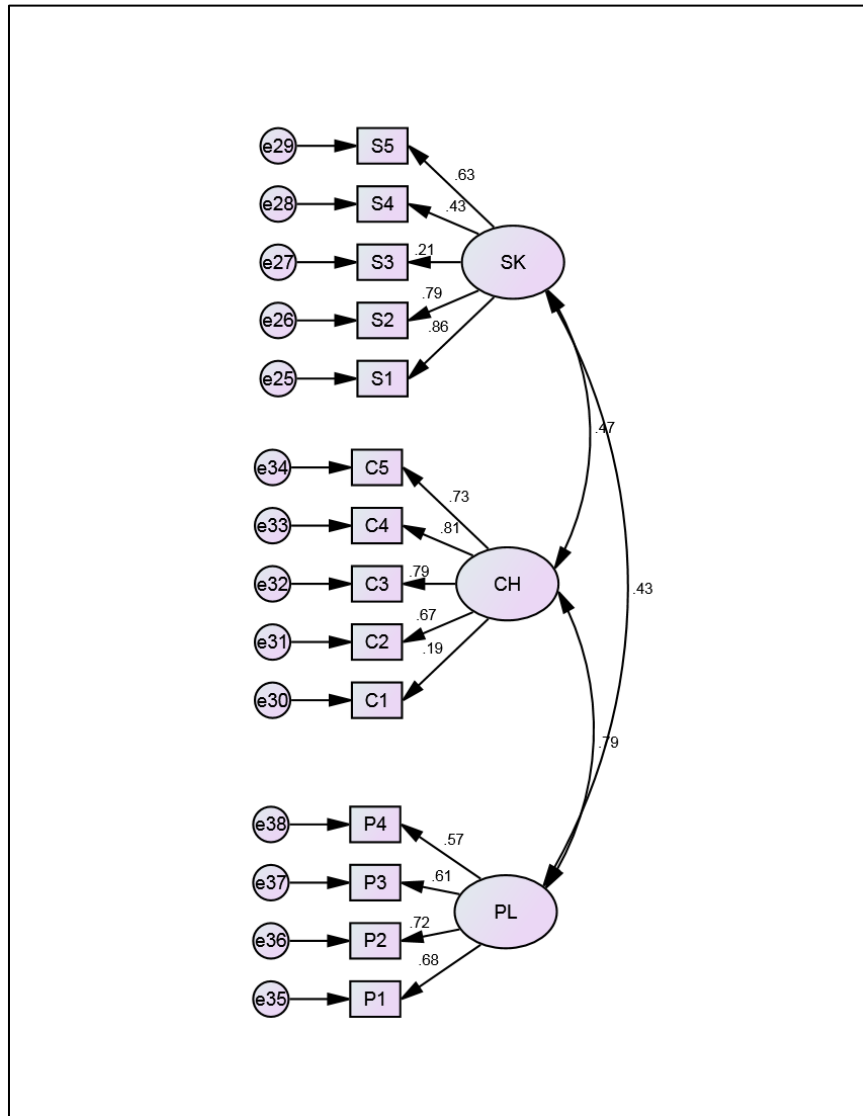
X^2(74, N=1389)=1209.299, p=.000; CFI=.838, NFI=.830, RMSEA=.105
Figure 5: Confirmatory Factor Analysis (Flow).

X^2(51, N=1389)=361.648, p=.000; CFI=.949, NFI=.910, RMSEA=.066
Figure 6: Revised Confirmatory Factor Analysis (Flow).

Chapter Five: Results

Structural Equation Model Analysis

The research hypotheses were tested through two separate steps. In step one, three competing models were tested and the one that fitted the data the best was retained for the tests of specific hypotheses in step 2. All tests were performed through SPSS AMOS 22.0 Structural Equation Model (SEM) analysis.

The three models tested were: (1) the full model which includes all direct and mediated effects of motivation, flow and MMORPG play variables; (2) the mediation model which assumes that all effects of motivation on MMORPG play are mediated by flow, thus excluding an direct effects of motivation on MMORPG play; (3) the non-mediation model precludes the mediation effects of flow by allowing only direct effects of motivation and flow on MMORPG play.

As shown in Figure 7, 8 and 9, SEM results indicated that the full model (CFI=.916) achieved a substantially better fit of the data than the non-mediation model (CFI=.858), and an almost identical fit as the mediation model (CFI=.914). Comparisons between the Chi-square values, however, indicated that the full model provided a significantly better fit than the mediation model (X^2/df difference=40.82/5, p<.0001). the next section presents hypothesis testing results based on the parameter estimates of the full model (Table 2).

Table 2. Chi-square Comparisons

	X^2/df	X^2/df difference	p
Full Model	1706.585/491		
Mediation Model	1747.410/496	40.82/5	<.0001

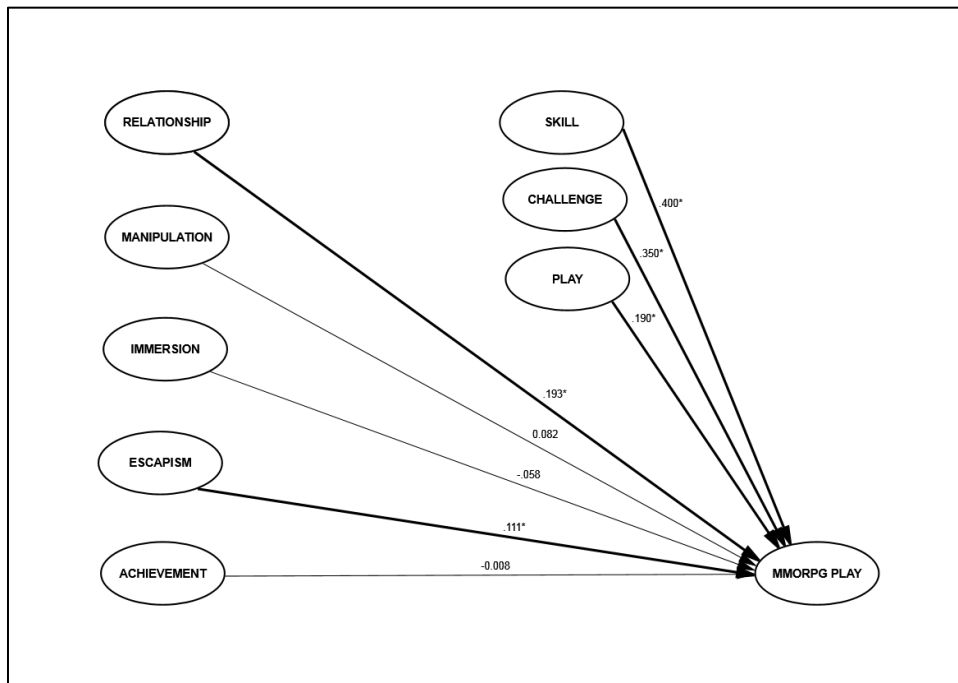| Non-mediation Model | 2563.178/506 | 856.59/15 | <.0001 |
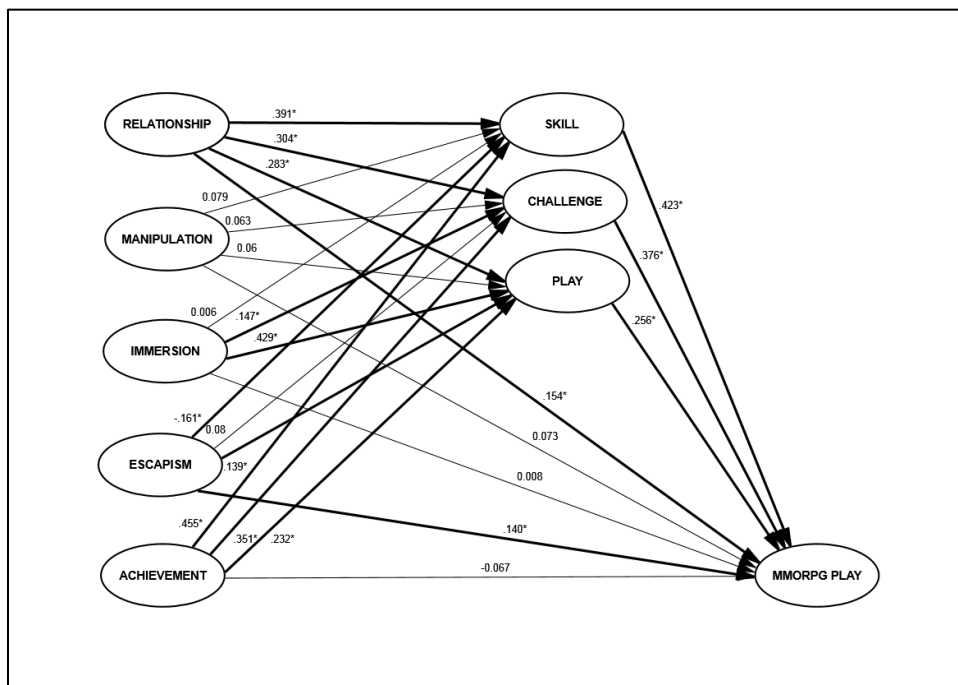
X^2(491, N=1389)=1706.585, p=.000; CFI=.916, NFI=.887, RMSEA=.042, *p<.05
Figure 7: Full Model
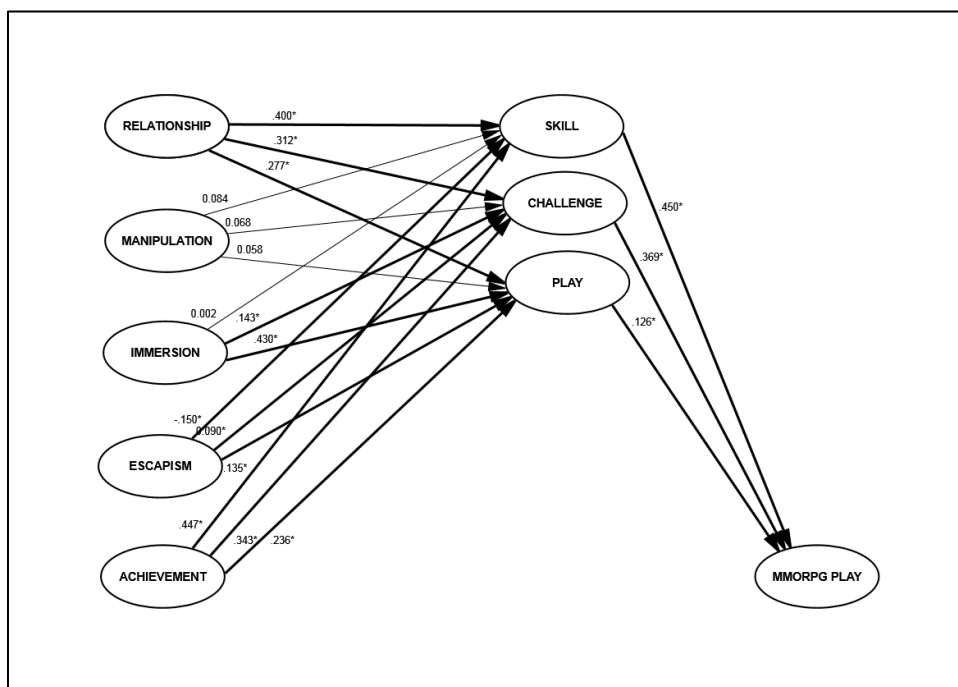
X^2(496, N=1389)=1747.410, p=.000; CFI=.914, NFI=.884, RMSEA=.043, *p<.05

Figure 8: Mediation Model

X^2(506, N=1389)=2563.178, p=.000; CFI=.858, NFI=.830, RMSEA=.054, *p<.05

Figure 9: Non-Mediation Model

Table 3: Standardized Regression Weights

			Estimate	p
Skill	←	Relationship	.391	***
Challenge	←	Manipulation	.063	.156
Play	←	Immersion	.429	***
Challenge	←	Relationship	.304	***
Play	←	Relationship	.283	***
Skill	←	Manipulation	.079	.077
Play	←	Manipulation	.060	.198
Skill	←	Immersion	.006	.885

Challenge	←	Immersion	.147	***
Skill	←	Escapism	-.161	***
Challenge	←	Escapism	.080	.053
Play	←	Escapism	.139	.002
Skill	←	Achievement	.455	***
Challenge	←	Achievement	.351	***
Play	←	Achievement	.232	***
MMORPG Play	←	Relationship	.154	***
MMORPG Play	←	Manipulation	.073	.102
MMORPG Play	←	Immersion	.008	.891
MMORPG Play	←	Escapism	.140	.002
MMORPG Play	←	Skill	.423	***
MMORPG Play	←	Challenge	.376	***
MMORPG Play	←	Play	.256	.009
MMORPG Play	←	Achievement	-.067	.272

*** p<.0001

Hypotheses Testing

H1: Direct effects of motivation on MMORPG play. Figure 10 focuses on the first set

of hypotheses, which examines the direct effects of motivation on MMORPG play. Each path

represents the direct relationship between the motivational components and MMORPG play.

Only two of the five direct paths were proven by their standardized regression weight (SRW) to

be statistically significant: Relationship → MMORPG Play (SRW=.154, p<.05) and Escapism →

MMORPG Play (SRW=.140, p<.05), supporting H1-a and H1-d respectively. The remainder of the paths were failed to reach significance. H1-b, H1-c and H1-e were not supported.
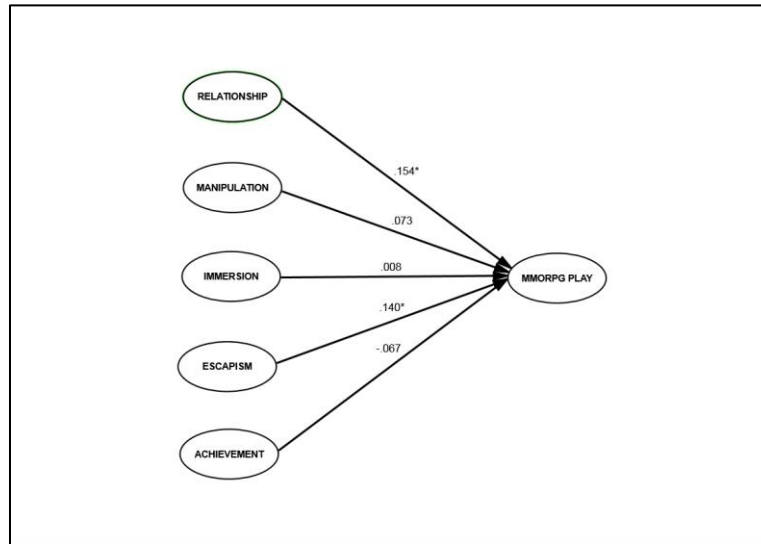
Figure 10: Direct Effects of Motivation on MMORPG Play

H2: Direct effects of flow on MMORPG play. Figure 11 addresses the second set of hypotheses concerning the direct effects of flow on MMORPG play. All paths connecting the mechanisms of flow and MMORPG play were shown to be significant. The strongest of these is Skill → MMORPG play (SRW=.423, p<.05), followed by Challenge → MMORPG play (SRW=3.76, p<.05), and then Play → MMORPG play (SRW=.256, p<.05). H2-a, H2-b and H2-c were thus supported.
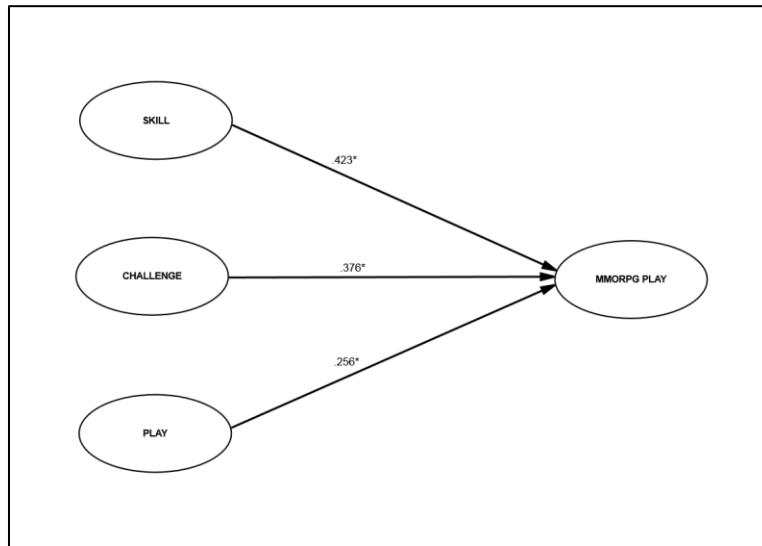
Figure 11: Direct Effects of Flow on MMORPG Play

H3: Mediated effects of motivation via flow on MMORPG play. Figure 12 presents the SEM results pertaining to the role of flow as a mediator of the relationship motivation. It should be noted that, to support to mediation hypothesis, both the effects of motivation on flow and the effects of flow on MMORPG play must be statistically significant. Results indicated that all three hypotheses related to relationship were supported (H3-a: Relationship → Skill, SRW=.391, p<.05; Skill → MMORPG, SRW=.423, p<.05; H3-b: Relationship → Challenge, SRW=.304, p<.05; Challenge → MMORPG Play; SRW=.423, p<.05; H3-c: Relationship → Play, SRW=.283, p<.05, Play → MMORPG Play, SRW=.423, p<.05).
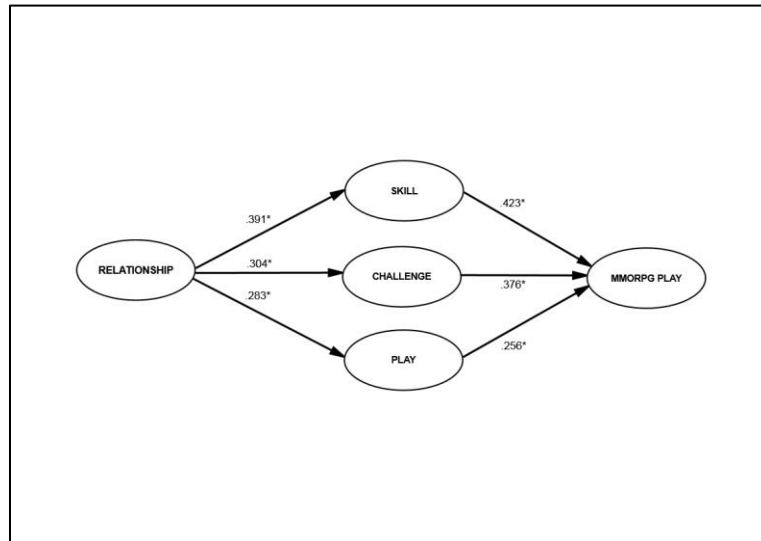
Figure 12: Mediated Effects of Relationship via Flow on MMORPG Play

None of the hypotheses pertaining to manipulation was supported, however, as shown in

Figure 13 (H3-d: Manipulation → Skill, SRW=.079, p=.077; Skill → MMORPG, SRW=.423,

p<.05; H3-e: Manipulation → Challenge, SRW=.063, p=.156; Challenge → MMORPG Play;

SRW=.423, p<.05; H3-f: Manipulation → Play, SRW=.060, p=.198, Play → MMORPG Play,

SRW=.423, p<.05).
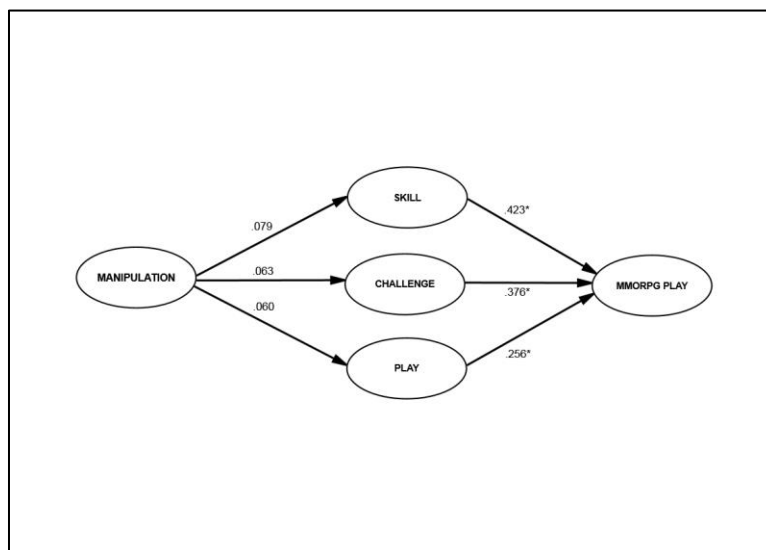
Figure 13: Mediated Effects of Manipulation via Flow

Hypotheses pertaining to immersion received mixed support from analysis. Both H3-h and H2-I were supported (H3-h: Immersion → Challenge, SRW=.148, p<.05; Challenge → MMORPG Play; SRW=.423, p<.05; H3-i: Immersion → Play, SRW=.429, p<.05, Play → MMORPG Play, SRW=.423, p<.05). However, H3-g was not supported (Immersion → Skill, SRW=.006, p=.885; Skill → MMORPG, SRW=.423, p<.05).
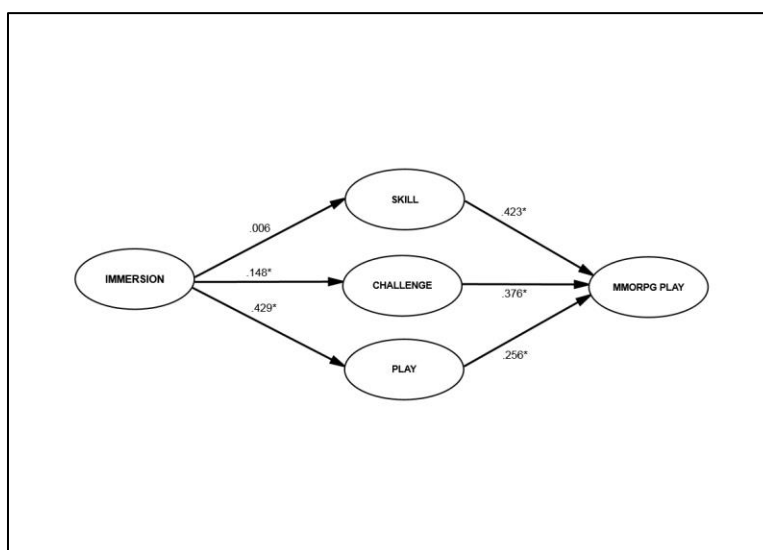
Figure 14: Mediated Effects of Immersion via Flow

Hypotheses related to escapism also received mixed support. While H3-j and H2-l were supported (H3-j: Escapism → Skill, SRW=-.161, p<.05; Skill → MMORPG Play; SRW=.423, p<.05; H3-l: Escapism → Play, SRW=.139, p<.05, Play → MMORPG Play, SRW=.423, p<.05), H3-k was only marginally supported (Escapism → Challenge, SRW=.080, p=.885; Skill → MMORPG, SRW=.423, p=.053).
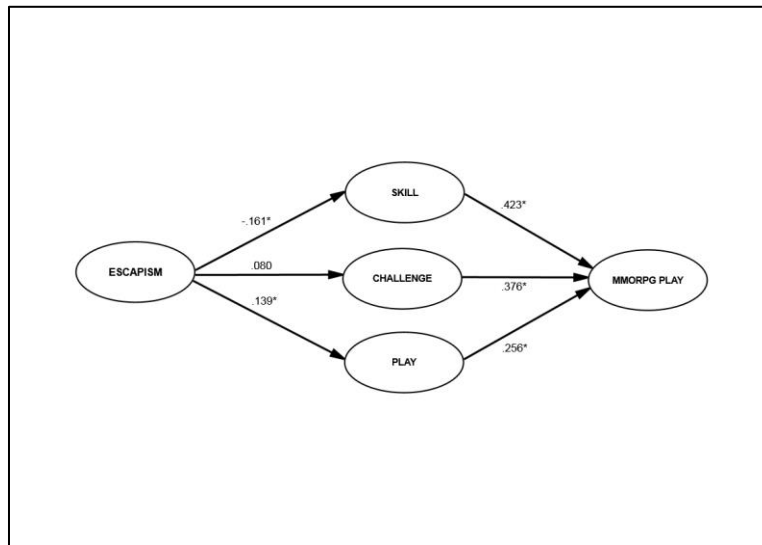
Figure 15: Mediated Effects of Escapism via Flow

Finally, all hypotheses pertaining to achievement were supported (H3-m: Achievement

→ Skill, SRW=.455, p<.05; Skill → MMORPG, SRW=.423, p<.05; H3-n: Achievement →

Challenge, SRW=.351, p<.05; Challenge → MMORPG Play; SRW=.423, p<.05; H3-o:

Achievement → Play, SRW=.232, p<.05, Play → MMORPG Play, SRW=.423, p<.05).
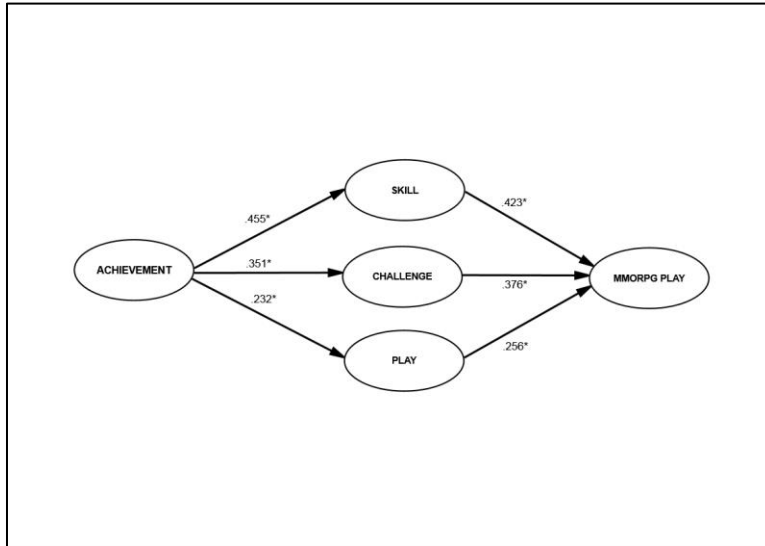
Figure 16: Mediated Effects of Achievement via Flow

Chapter Six: Discussion and Recommendations

Discussion

The initial questions of importance to the researcher were: What is the relationship between the motivations of MMORPG gamers and their experiences with flow? Are the motivational elements mediated by the mechanisms of flow? Overall, the model including both the mediated effects of motivation and the direct influences of motivation and flow on MMORPG gameplay proved to be the best fit for the data, which is consistent with the proposed set of hypotheses.

Table 4: Hypothesis results

H1: Motivations have a direct effect on time spent playing.		
H1-a	Relationships have a direct effect on time spent playing (Relationship → MMORPG Play)	Supported
H1-b	Manipulation has a direct effect on time spent playing (Manipulation → MMORPG Play).	Not supported
H1-c	Immersion has a direct effect on time spent playing (Immersion → MMORPG Play).	Not supported
H1-d	Escapism has a direct effect on time spent playing (Escapism → MMORPG Play).	Supported
H1-e	Achievement has a direct effect on time spent playing (Achievement → MMORPG Play).	Not supported
H2: Flow experiences have a direct effect on time spent playing.		
H2-a	Skill has a direct effect on time spent playing (Skill → MMORPG Play)	Supported
H2-b	Challenge has a direct effect on time spent playing (Challenge → MMORPG Play).	Supported
H2-c	Play has a direct effect on time spent playing (Play → MMORPG Play).	Supported
H3: The effects of motivations on MMORPG play are mediated by the experiences of flow.		
H3-a	The effects of relationship motivations on time spent playing are mediated by the experiences of skill (Relationship → Skill → MMORPG Play).	Supported

Table 4 (Continued)

H3-b	The effects of relationship motivations on time spent playing are mediated by the experiences of challenge (Relationships → Challenge → MMORPG Play).	Supported
H3-c	The effects of relationship motivations on time spent playing are mediated by the experiences of play (Relationship → Play → MMORPG Play).	Supported
H3-d	The effects of Manipulation motivations on time spent playing are mediated by the experiences of skill (Manipulation → Skill → MMORPG Play).	Not supported
H3-e	The effects of Manipulation motivations on time spent playing are mediated by the experiences of challenge (Manipulation → Challenge → MMORPG Play).	Not supported
H3-f	The effects of Manipulation motivations on time spent playing are mediated by the experiences of play (Manipulation → Play → MMORPG Play).	Not supported
H3-g	The effects of immersion motivations on time spent playing are mediated by the experiences of skill (Immersion → Skill → MMORPG Play).	Not supported
H3-h	The effects of immersion motivations on time spent playing are mediated by the experiences of challenge (Immersion → Challenge → MMORPG Play).	Supported
H3-i	The effects of immersion motivations on time spent playing are mediated by the experiences of play (Immersion → Play → MMORPG Play).	Supported
H3-j	The effects of escapism motivations on time spent playing are mediated by the experiences of skill (Escapism → Skill → MMORPG Play).	Supported
H3-k	The effects of escapism motivations on time spent playing are mediated by the experiences of challenge (Escapism → Challenge → MMORPG Play).	Not supported
H3-l	The effects of escapism motivations on time spent playing are mediated by the experiences of play (Escapism → Play → MMORPG Play).	Supported
H3-m	The effects of achievement motivations on time spent playing are mediated by the experiences of skill (Achievement → Skill → MMORPG Play).	Supported
H3-n	The effects of achievement motivations on time spent playing are mediated by the experiences of challenge (Achievement → Challenge → MMORPG Play).	Supported
H3-o	The effects of achievement motivations on time spent playing are mediated by the experiences of play	Supported

| (Achievement → Play → MMORPG Play). | |

There are several notable elements of the results from this study, chief among them is the irrelevance of the manipulation motivation on MMORPG play. Yee (2006, 2007) proposes that the desire to manipulate other players and various aspects of the game is an adequate motivator to engage in MMORPG play. However, results of the present study show no significant relationship between motivation and frequency of play, nor does it support a mediated effect of manipulation on MMORPG play. More research is needed to determine the role of manipulation as a motivator in gaming studies.

Additionally puzzling is the significant but negative relationship between Escapism → Skill (SRW=-.161). Perhaps the concentration necessary to maintain a high level of skill in-game diminishes the opportunity for an escapist experience for the player. Nevertheless, the negative relationship is likely offset by the significant and positive relationship between Skill → MMORPG (SRW=.423), thus securing the role of escapism as an important motivating factor. It is also worth noting that, as far as the relationship between flow and MMORPG play is concerned, skill carries the highest regression weight, thus appears to be the most important components of flow. In future research, additional attention should be paid to the skill component, perhaps as a type of motivation for the players.

The importance of flow as a concept in MMORPG play is also bolstered by the results of this study. The mechanisms of play, challenge, and skill are all strong predictors of MMORPG play behaviors in addition to being tightly interwoven with the motivations. Generally speaking, quantifying the internal states of motivation is a difficult concept, as illustrated by numerous studies into uses and gratifications. Looking towards the effects of MMORPG media on players

through the concept of flow allows participants to affirm more tangible experiences instead of responding to illusive descriptions of motivators.

In a similar fashion to the MMORPG-specific motivators developed by Yee, a more specific set of flow mechanisms could be developed to better explain the experiences of video game players, or perhaps specifically MMORPG players. Developing and verifying a scale with items geared specifically towards these activities could better quantify the experiences of gamers, and could in turn provide better data when flow experiences are included in a complex model with multiple variables used to explain behaviors.

Together, results of this study showed significant direct and mediated effects of motivation, flow and MMORPG play, and the irrefutable importance of flow in the internal processes of MMORPG players as they relate to their games. Through comparing alternative theoretical models and related assumptions, the present study brings us a step beyond previous research which disjointly examined the factors in gaming research. Overall, the present findings demonstrates the complexities involved in gaming and the need for more research recognizing these intricacies and employing more multifaceted models.

Research and Pragmatic Implications

The present study suggests that MMORPG gamers are highly motivated by relationships and Achievement, and that they have a high potential for experiencing flow in-game. Game developers can shape game mechanics and marketing around these factors while neglecting language or in-game devices that emphasize manipulative activities. In development stages, this could mean focusing more resources towards enhancing communication mechanisms or better pacing the game's Achievements.

Where research is concerned, the present study proposes a more holistic view of gaming experiences that account for more than a single variable or set of variables. It supports the idea that MMORPG player motivations are mediated by experiences in their impact of game usage, in addition to having direct effects. Future research may consider processes of mediation when considering video game use and experiences. This may not be exclusive to MMORPGs.

The findings of this study suggest that the motivations MMORPG players experience are either partially or completely motivated by the mechanisms of flow outlined by Novak and Hoffman (1997). This suggest a positive and mediated effect of motivations on MMORPG play habits, as well as a strong positive affect of the three mechanisms of flow on MMORPG play as a time investment. This suggests that gamers experiencing different types of motivations, or multiple combinations of motivations may experience games differently in terms of challenge, play, skill, and the overall enjoyment necessary to keep them investing their time in gameplay.

These findings can be used by game development companies, those who write about MMORPGs, agencies that market games to players, and those who examine the intersections of gaming, psychology, and sociology:

1. Game developers: This study reveals the complex relationships between why people engage in MMORPG gameplay, how they experience the game, and how their time investment is impacted by this. As companies develop games with storylines that appeal to various types of players, keeping in mind *why* these players will be motivated to play the game may influence sales or continued revenue as many developers adopt a model of continual in-game sales of downloadable expansion content. For instance, should future studies note that gamers engaging in classic computer RPGs without a social multiplayer component experience different

motivations, developers may choose to strengthen their mechanics for communication and social interaction in place of more solo activities.

2. Video game bloggers and writers: In this era of online content and communication, those who engage in online gaming find a natural community on Internet forums and blogging communities. Today, players post videos of their in-game communities, blog about their experiences with various games, and even reaction videos to announcements from developers, especially around the time of major video game conventions and conferences where announcements are made. Understanding the motives of these gamers can help those writing for MMORPG audiences cater their content by including more discussion of relationships and Achievements in place of mechanics on occasion.

3. Video game marketers: As we had discussed, the market for video games is massive and still growing. Those tasked with marketing games to consumers with varying needs and desires have a tricky task of conveying the most enticing aspects of a game to users who may or may not be interested. Knowing what motivates an MMORPG player can help those in advertising, marketing, and public relations for MMORPG publishers can help them to cater their content and emphasize the most important aspects of a game. The findings of this study can better inform interviews and focus groups used to assess campaigns.

4. Psychologists and sociologists: There have been an abundance of studies focused on problematic use of video games, including MMORPGs. An examination of the motives of gamers who seek out various types of games to fill their needs may help those working with patients understand where their patients are coming from and how they experience their chosen activity. Psychologists and psychiatrists working with patients both with and without video game

addition can benefit from this understanding, as can sociologists who study the interactions between gamers and within groups of players.

For those conducting further research, this study has several important implications. Perhaps the most important research implication is the complexity of the internal states of MMORPG players and the causal relationship of motivation and experiences. This study brings to light the importance of internal conditions on behavior, and the intricacy of reasons for engaging in MMORPG play and the actual experiences that take place in-game. Researchers may also consider neglecting manipulation as a motivator, since it has little to no influence on gameplay experiences or behaviors, as indicated by this study. The removal of manipulation or less-vital motivators may leave room for researchers to spend more time focusing on relationship and achievement motivators, which were shown to be significantly more important in their effect on frequency of play.

Limitations

Though the structural equation model of these variables offered valuable data concerning the relationships between all of the variables, it cannot adequately explain causal relationships within the model. The paths in the model do reflect our hypotheses of causation that are supported by the data and are consistent with prior research. Future research should attempt to further test the mediation of motivations through the mechanisms of flow, perhaps with the more broader models of flow suggested by Csíkszentmihályi and those building on his work and methods (Jackson & Eklund, 2002), or additional models of motivation suggested and tested by Yee.

Additionally, the sample used was a convenience sample of self-selected individuals recruited through online forums. Though the age and gender distribution is close to those reported by Yee (Yee, 2009), a larger sample could yield more generalizable results.

Chapter Seven: Conclusions

MMORPG games have come a long way from their beginnings on tabletops and across networked computers displaying MUDs. Today they are rich virtual experiences shared by players around the world, enabling individuals from an array of nationalities, backgrounds, and walks of life to share experiences and connect through the games they choose.

Based on the results of this study, the motivations that bring these players to engage in MMORPGs are far more complex than previous literature suggested. The motivations specific to MMORPGs – relationships, manipulation, immersion, escapism, and achievement – were tested for their direct effect on MMORPG play as well as their indirect effects via the elements of flow – challenge, skill, and play. This study found that manipulation holds no direct or mediated influence over the amount of time players invest in MMORPGs, and that achievement motivations are a potent influence, but only when mediated by flow.

The incentive for relationships is by far the most influential motivator tested. Its effects on MMORPG play behaviors are significant in both the direct and mediated sense. Its importance cannot be understated, as it is the only motivation whose direct and mediated effect are supported by the data. It is in the very nature of these games to support the connections of players – both directly through communication as themselves and indirectly as they role-play through their characters. The social element of these games is enabled by the ever-expanding capacities of the internet, and the advancing capabilities of game frameworks and graphics creates more and more rich and immersive experiences with each generation of games.

In addition, the elements of flow were all found to have a significant direct influence on MMORPG play, telling that the players in the sample experience a flow state facilitated by a balance of challenge, skill, and play frequently in their MMORPG play practices. This further supports the complex nature of player experiences, motivations, and behaviors, and maintains the claim that MMORPG games are proficient at allowing players to experience optimal states of flow.

Overall, the most important finding of this study is, as stated previously, the demonstration of the complex internal states of motivation and flow and their intricate network of influence on MMORPG players and their behaviors. Video games and MMORPGs have come a long way since the 1950s, as has technology users' mental framework for the use of virtual games. In turn, the connections between players internal states and behaviors has also grown in complexity, creating experiences as rich and vibrant as the virtual worlds players inhabit.

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Appendices

Appendix A: Survey Questionnaire

MMORPG Gaming and Motivations

MMORPG Player Motivations IRB Study #00015833

This survey is part of a research study looking into the motivations and experiences of massively multiplayer online role-playing game players. If you choose to participate, you will complete the following survey. The survey should take approximately 15 minutes of your time. Participation is voluntary, and you can withdraw from the study at any time.   This study has no foreseeable risks, and no known direct benefits to the subject. All data will remain confidential, and no identifiable information will be collected for the purposes of the survey.   Upon completion of the survey, you will be able to provide your email address to enter a random drawing for one (1) of two (2) $15 STEAM gift cards for http://store.steampowered.com/. This information will remain confidential.

For more information, contact Theresa Woods at tlwoods@usf.edu. If you have questions about your rights, general questions, complaints, or issues as a person taking part in this study (IRB #Pro00015833), call the USF IRB at (813) 974-5638.   Please understand that by proceeding with the survey procedure described above, you are agreeing to participate in this research.

Title: MMORPG Player Motivations Version 1 January 13, 2014

A massively multiplayer online role-playing game (MMORPG) is a genre of video game that combines role-playing games with large-scale virtual environments in which players interact with one another. In MMORPGs, players assume the role of a character - often a character that they create - and perform various actions in the virtual world. These actions include, but may not be limited to trading, questing, dungeons, raiding, player vs. player combat (PvP), and communication.

Do you play or have you previously played massively multiplayer online role-playing games?

1. Yes
2. No

MMORPG motivations (20 items)

1. Relationship

    a. *I find myself having meaningful conversations with others.*

    b. *I have made some good friends in the game.*

    c. *I talk to my friends in the game about personal issues.*

    d. *Friends in the game have offered me support when I had a real life problem or crisis.*

2. Manipulation

    a. *I like to taunt or annoy other players.*

    b. *I beg for money or items in the game.*

    c. *I like to dominate other characters/players.*

    d. *I like to manipulate other people so they do what I want them to.*

    e. *I am comfortable benefitting from inexperienced players' lack of knowledge.*

3. Immersion

    a. *I like to try out new roles and personalities with my characters.*

    b. *People who role-play extensively bother me.*

    c. *I like the feeling of being part of a story.*

    d. *I make up stories and histories for my characters.*

4. Escapism

    a. *I like the escapism aspect of the game.*

    b. *Playing the game lets me forget some of the real-life problems I have.*

    c. *Playing the game lets me vent and relieve stress from the day.*

5. Achievement

    a. *It's very important to me to get the best gear available.*

    b. *I try to optimize my XP gain as much as possible.*

    c. *I like to feel powerful in the game.*

    d. *Doing massive amounts of damage is satisfying.*

Flow (14 items)

1. Skill

    a. *I am skilled at playing MMORPGs.*

    b. *I consider myself knowledgeable about moves, techniques, and strategies in/for the MMORPGs I play.*

    c. *I know less about MMORPGs than most players.*

    d. *I find it easy to play MMORPGs.*

    e. *I know how to do what I want when playing MMORPGs.*

2. Challenge

    a. *Mastering a MMORPG is easy for me to do.*

    b. *MMORPGs challenge me.*

    c. *MMORPGs challenge me to perform to the best of my ability.*

    d. *MMORPGs provide a good test of my skills.*

    e. *I find that playing MMORPGs stretches my capabilities to the limits.*

3. Play

    a. *I feel mentally flexible when playing MMORPGs.*

    b. *I feel creative when playing MMORPGs.*

    c. *I feel spontaneous when playing MMORPGs.*

    d. *I feel playful when playing MMORPGs.*

MMORPG Play and Demographic Information (14 items)

1. What massively multiplayer online role-playing games do you currently play?

2. What massively multiplayer online role-playing games have you played previously?

3. How often do you play massively multiplayer online role-playing games?

   a) Never

   b) Rarely

   c) Sometimes

   d) Often

   e) 2-3 Times a Week

   f) Daily

4. How many hours was your longest session of continuous MMORPG game play?

5. How many hours do you typically play massively multiplayer online role-playing games during a normal work/school week?

   a) 10 hours or less

   b) 11-20 hours

   c) 21-30 hours

   d) 31 hours or more

6. How many hours per week do you typically play massively multiplayer online role-playing games during vacation?

   a) 10 hours or less

   b) 11-20 hours

   c) 21-30 hours

   d) 31 hours or more

7. Which MMORPG did you play first?

8. Which MMORPG have you played the most?

9. Which MMORPG(s) do you play currently?

10. How many MMORPGs have you played since you first started playing MMORPGs?

11. I would consider myself addicted to MMORPG video games.

    a) Yes

    b) No

12. I consider my in –game friends to be as close as or closer than my friends in real-life.

    a) Yes

    b) No

13. The most rewarding/satisfying experience I have had in the past 30 days was:

    a) Something that happened in a game.

    b) Something that happened in real life.

14. The most annoying/infuriating experience I have had in the last 30 days was:

    a) Something that happened in the game.

    b) Something that happened in real life.

Appendix B: IRB Approval Letter

USF
UNIVERSITY OF
SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

1/16/2014

Theresa Woods, B.A.
Mass Communication
4202 East Fowler Ave.
Tampa, FL 33620

RE: **Exempt Certification**
IRB#: Pro00015833
Title: Why we play: An examination of the motivations for MMORPG social gaming

Study Approval Period: 1/14/2014 to 1/14/2019

Approved Items:
Protocol Document:
Protocol for MMORPG Player Motivation Study

Consent Script:
Consent Script

Dear Ms. Woods:

On 1/14/2014, the Institutional Review Board (IRB) determined that your research meets USF requirements and Federal Exemption criteria as outlined in the federal regulations at 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at 45CFR46.117(c) which states that an IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in

the Belmont Report and with USF IRB policies and procedures. Please note that changes to this protocol may disqualify it from exempt status. Please note that you are responsible for notifying the IRB prior to implementing any changes to the currently approved protocol.

The Institutional Review Board will maintain your exemption application for a period of five years from the date of this letter or for three years after a Final Progress Report is received, whichever is longer. If you wish to continue this protocol beyond five years, you will need to submit a new application at least 60 days prior to the end of your exemption approval period. Should you complete this study prior to the end of the five-year period, you must submit a request to close the study.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John Schinka, Ph.D., Chairperson
USF Institutional Review Board