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Online MMORPG Games in China: Player Motivations and the Mediating Role of Flow

Jiaxin Liu
University of South Florida, j.liu2211@yahoo.com

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by

Jiaxin Liu

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Major Professor: Scott S. Liu, Ph.D.
Kelli Burns, Ph.D.
Roxanne Watson, Ph.D.

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ABSTRACT

Massively Multiplayer Online Role-Playing Games (MMORPGs) are gaining popularity and are being used widely in China. The aim of this study is to explore the relationship between the motivation and the experience of MMORPG players, and the effects of playing MMORPG through an extensive online survey of more than 300 Chinese participants (n = 305). Specifically, the findings support the complex relationship between variables, including the direct effects on motivation and flow, on the time the players invest in MMORPG games, and the mediated effects on motivations through flow. In addition to the importance of direct and indirect effects on the frequency of playing, the causal relationship between the two variables are also examined. This has resulted in several important outcomes, including (1) the overwhelming importance of achievement as a motivator for MMORPG players, and (2), there is a lack of motivation for escapism and the experience of the elements of the game by players, (3) the importance of achievement and relationship as the factors of motivation when mediated by flow, (4) the importance of the flow mechanism (challenge, skill, and play) for the direct effects of MMORPG play-behaviors, and (5) the effects of intricate connections between the variables on MMORPG player's habits.

CHAPTER ONE:

INTRODUCTION

Overview

The number of online game users in China is 3.04 billion (China Internet Network

Information Center, 2010). Under the impact of the financial crisis, the global economic situation

is grim, but the online game industry has shown good development and rapid growth. According

to the survey data of iResearch (2011), the online game market in China in 2010 was 32.74

billion Yuan. Throughout Asia, it is expected that the revenue generated by the online game

industry in 2012 will reach US$5.7 billion (Wu, Wang, & Tsai, 2010).

According to the statistics of the 17th China Internet Development Report by China Internet

Network Information Center (2015), China's users participating in video games accounted for

33.12% of all 111.1 billion Internet users. According to the "Fifth China Online Game Market

Survey Report" published by Shanghai Ereli Market Consulting Co., Ltd. (2005), the average

age of Chinese online game players is 24 years, of which, those younger than 25 years constitute

67.84% of all online game users. Among the Chinese online video game players, young people

are the major users. For a considerable number of young game users, playing online video games

has become one of the most important occupations of their online life.

In China, the average single-game playing time of online game users is 3.1 hours, which is slightly more than 3 hours, which is the limit of healthy standard game-time; and 32.9% of players spend 3–5 hours in games, and 13.5% of players spend more than 5 hours in a game (China Internet Network Information Center, 2015).

However, there is a high level of anxiety among the people about online video games. It seems that only negative effects such as violence, deception, and addiction are brought to the youth by online video games. It is generally feared that the excessive participation of young people in online games will cause many new social risks.

On the one hand, the emergence of online video games has brought a series of social problems. Among them, one everyone is concerned about is online video game addiction, which is one type of Internet addiction (IA). A large number of studies worldwide have produced copious statistics that confirm the existence of online game addiction (Chou & Ting, 2003; Wan & Chiou, 2006a). Moreover, the negative psychological and physiological consequences of online game addiction cannot be ignored (Mafe & Blas, 2006; Widyanto & Griffiths, 2006). On average, these young players spend six hours a day participating in competition; most of them are high school or college students who live in cities and are financially dependent on their parents (People's Daily Online, 2007).

Whang, Lee, and Chang (2003) associate with academic failure of Chinese young people with excessive online video game playing. The most shocking story of online game addiction in China is that of Li Meng, an online video game addict in his twenties. According to IBnews

reports (2013), Mr. Li spent nearly six years playing online video games in a small Internet cafe. During that time, he did not want to take even a shower. Li said that there were only two things that could get him out of his chair, food and restroom (IBTimes Staff Reporter, 2013). This story may be the tip of the iceberg because statistics show that there are 24 million online video game addicts in China (Hayoun, 2014). So, what is it about video games that causes the players to become addicted to the online video games (People's Daily Online, 2007)?

There are many types of online video games and the competition among the players is fierce. Although there are many online games developed indigenously in China, their penetration rate is very low. Foreign online games occupy the larger part of the Chinese gaming market (China Internet Network Information Center, 2015). How to improve the competitiveness of domestic online video games to increase the loyalty of game players to indigenous online games is also a problem to consider.

Therefore, while we explore online video game addiction to cultivate loyalty to the indigenous video games among the game players, our fundamental concern is to discover the reasons why players play online video games, and why the players become addicted to the online video games—the motivations and the flow of online video games.

Statement of the Problem

Despite the applicability of positive psychology, today's mainstream society has a high level of anxiety about online video games. Many studies focus on the violence and deception that are the major content of online video games, which can have negative effects on the teenagers. It is

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generally feared that the excessive participation of young people in online video games will

cause many new social risks.

Studies undertaken at the transition from the twentieth to twenty-first century seem to agree

on the compulsive enthusiasm—an indicator of addiction—and the experience of flow (Wang,

Khoo, Liu, & Divaharan, 2008) as the causes of the impact of MMORPG on the offline

relationships (Utz, Jonas, & Tonkens, 2012). Also, the motivation for playing MMORPG has

been analyzed regarding addiction, problematic use, and game activity (Billieux et al., 2012;

Suznjevic & Matijasevic, 2010; Wan & Chiou, 2007; Yee, 2006b). So far, although there are

many foreign expositions on motivations and flow theory, there is no research in China that

attempts to combine motivations and flow with the game habits of MMORPG players to clarify

the overall situation of the player-experience, including playing-time and playing-behavior.

Significance of the Study

Intended or not, exploring Internet addiction and game development are important issues in

the Chinese online game market. Therefore, Woods (2014) addressed the relationship between

the motivation and the flow of online video games. The present study will analyze and solve the

motivational experience that Chinese game players derive from specific MMORPGs, and the

satisfaction and rewards they obtain. At the same time, the MMORPG specific motivation

framework (Yee, 2007) and flow conceptualization (Csikszentmihalyi, 1990; Novak & Hoffman,

1997, July) were used to create a structural equation model to establish direct and indirect

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(mediated) links between motivations, flow, and MMORPG variables. Therefore, in addition to assessing the direct impact of motivation and flow on the game process, this study will investigate and establish a model for the more comprehensive motivation and experiences of Chinese players through the mediating effects of flow and motivation.

CHAPTER TWO:

LITERATURE REVIEW

Video games and MMORPGs

Computer role-playing games (CRPGs) were developed before the first widely adopted

MMORPG. According to Tresca (2010), in CRPGs, players can interact with computers,

customize their characters through stories, and participate in tasks. In the 1980s and 1990s,

people thought that the MMORPGs would end the popularity of the desktop role-playing games

because, in these games, the computer played the role of a dungeon master. However, contrary to

this prediction, through the development of the fan community websites and forums, enthusiastic

players communicate through message boards, fan-generated content began to appear to cause

CRPGs to customize roles and participate in tasks through stories (Apperly, 2006 year). CRPGs

usually include auxiliary tasks in addition to the active storyline, inspiring the development of

the plot and allowing the development of the characters in the game. Among the games and the

game developers, the customization levels of appearance, skills, and personality vary, but the

emotions are the same, which means the user controls some degree of characters' growth and

development because the character can move to the levels in the story (Trescar, 2010).

Massively Multiplayer Online Role-Playing Games (MMORPGs) have retained social roles

in single-role-player games because MMORPGs are based on multiplayer games (Apperly, 2006). MMORPGs are a combination of CRPG and Multi-User Dungeons (MUDs) similar to *Mines of Moria*, with the framework similar to *Dungeons and Dragons* (Wood, 2014). Also, Shen C et al. (2013) believe that MMORPGs symbolize an all-encompassing "world" in which game users can use behaviors, such as character growth, weapon use, and events like monster attack, and home decoration to dominate in virtual life. More importantly, the user can be involved in social groups in the short or long term, such as *The Sims*. Therefore, the MMORPGs can be seen as an interactive community that has a continuous scene "populated" by numerous game-users. Although this community is in a virtual world, it has distinctive features of socialization.

Self-determination theory

Self-determination theory comes from social psychology, and it has been used in various forms of media and games (Billieux et al., 2012; Utz, Jonas, & Tonkens, 2012; Wan & Chiou, 2007). The theory of self-determination is an extension of the use and satisfaction theories that point out that people are looking for media forms that satisfy their individual needs, thus explaining different user preferences (J.T. Klapper, 1957–1958; J. Klapper, 1960). Current research on the personal use of media and ways to achieve satisfaction will include social and psychological factors, including health, age, social and economic conditions, a sense of control over choices and outcomes, and a variety of interpersonal needs and motivations (Papacharissi,

2008). Self-determination theory explores the extent to which individual behavior is determined and controlled by the internal environment. It explores the relationship between behavior and internal and extrinsic motivators (E. L. Deci & Ryan, 1985). This theory comes from social psychology, and for many years it has been used in various forms of media and is constantly being used for games in various contexts (Billieux et al., 2012; Utz, Jonas, & Tonkens, 2012; Wan & Chiou, 2007).

Self-determination theory is related to online video games because, by definition, the game is a freely chosen activity. Unlike many other activities, there is no element of gaming that is a necessary condition or a basic human need for physical survival, or for work. Since online video games (especially MMORPGs) allow users to cultivate external characters in the world in which they mediate, and engage in social interactions that are not directly and inextricably linked to their true identities, the users' motivation for their activities in the virtual world can influence their degree of satisfaction with online video games (Reiss, 2012).

Self-determination theory creates a more complete personal motivation model by considering social backgrounds and individual differences that may support or influence satisfaction or experience. This theory examines in-depth the intrinsic motives of the individual. These motives may or may not be integrated with the external influences, and often in some form of feedback (E.L. Deci & Ryan, 1985). The intrinsic motivational behavior, even when mixed with extrinsic motivation, is often associated with natural personal growth processes. The reliance of an individual on the extrinsic motivation for actions is often associated with impaired

autonomy, ability, and relevance (EL Deci & Ryan, 2009).

Self-determination theory identifies three innate needs that motivate human behavioral intention. First one is **competence**, which refers to the need to control results and master an activity. Moreover, **relevance** refers to the general desire to interact and to connect with others in a caring and helpful relationship. **Autonomy** is a general impulse (E.L. Deci & Ryan, 2009). These needs have been checked and are considered fully suitable for games, especially for MMORPGs, because they contain social components (Billieux et al., 2012; Trepte et al., 2012; Vallerand et al., 2003). The motivation for the study of self-determination theory is based on the view that human beings are essentially active in their own emotions and desires, and they have natural growth and functions that tend to have integrated desires. These things do not happen automatically because this is where the motives behind personal behavior come into play (E.L. Deci & Ryan, 1985).

Theoretical Framework

MMORPG-specific player motivations

Although the development of General Algebraic Modeling System (GAMS) did confirm the link between the rules and motivations defined by the theory of self-determination, the study was not specifically related to the MMORPG. The subject pool consists of players who participate in more than 25 different games, only some of which are MMORPGs. In response to this lack of genre-specific knowledge, Yee (2007) revealed a five-factor model of MMORPG

user-motivation by analyzing an extensive three-year survey. Motivations for discovery include immersion, escapism, manipulation, achievement, and relationships.

Users who enjoy **immersion** factors enjoy the background of the fantasy world where they assume another identity. They participate in the narrative of the game and often create an embodiment of the deep history associated with the myth of the virtual world. Concepts of immersion include discovering, which is discovering new places or things that other players do not know; role-playing or creating a rich persona and interacting with other players to make up an impromptu story; and customization, referring to the interest in customizing the appearance of the character.

Immersion and **escapism** are closely related to or tend to participate in MMORPG games to avoid real stress and problems. The escapism provided by the game allows the player to temporarily forget about his or her problem, which means leaving the reality and focusing on the game and provides players with a new set of tasks and easy-to-implement goals, providing them with a sense of satisfaction that they do not currently have (McGonigal, 2011).

The **achievement** factor refers to the fact that progressive strengthening of the desire to play the game is related to the achievement factor. The successive higher levels provided in MMORPG give the players the opportunity to gain experience and make their character more powerful. At the same time, by participating in transactions, and various types of tasks and activities the players may produce advanced weapons or earn game currency to buy new weapons, and thereby the players can choose to play stronger roles. Although this is a powerful

motivator, it has already been shown that motivations such as teamwork and the urge to explore

and discover also are important (Billieux et al., 2012).

Achievement can be promoted, which refers to the desire to gain strength, to progress in the

game and accumulate the currency and status in the game; mechanics refers to the analysis of

interest in game-mechanics to optimize performance; and competition refers to the desire to

compete with others and outdo others by higher achievement is related to the player's activities

(Suznjevic & Matijasevic, 2010).

Achievements and **manipulations** can work together because some players seek

achievement and satisfaction by manipulating other players. In the MMORPG context this means

that users tend to materialize other players in the game and manipulate them for personal gain

(Yee, 2006b).

The **relationship** components refer to the interactions and relationships that players establish

during the game. It includes social networking, including chatting casually, assisting other

people in the game, and making friends. It also covers teamwork, which includes collaborative

activities such as deals, raids and dungeons, and other group achievements. People driven by

relationships experience the desire to interact with other users. They are willingn to invest

emotion and energy to form supportive and meaningful relationships, including discussions of

real-life issues. It has been shown that when the MMORPG game approaches a healthy level of

rapport with harmony, which ensures that the player can voluntarily participate in the MMORPG

and does not allow it to interfere with real life, in-game support and reciprocal relationships are

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possible without having negative effects on offline relationships (Utz et al., 2012; Vallerand et al., 2003).

Yee's (2006) concept of motivation for MMORPG players is based on a large amount of data from Daedalus Project and developed through several quantitative and qualitative studies. Yee (2006a) pointed out that the integrity of research based on web-based survey is perfect because participants have a high degree of motivation and self-identity. Several online surveys conducted on MMORPG players revealed that the formation of MMORPG players' motivation, empirical models, and a series of questions could be used as a basis for further investigation (Yee, 2006a; Yee, 2006b; Yee, 2009). Also, Billeaux et al. (2012) monitored nearly 700 avatars in *World of Warcraft* and compared their behaviors in the game with the survey results, confirming Yee's conclusions about the players' motivations. The relationships, such as the positive relationship between exploration and discovery, demonstrate Yee's online game motivation model. The behavior in the game is sufficient to describe the MMORPG player's experience.

Flow

In the simplest terms, flow refers to the best individual experience in challenging activities in which they are completely immersed without becoming frustrated and anxious.

Csikszentmihalyi (1990) extensively describes the psychology of this kind of experiences, calling it the condition that people must prepare, cultivate and defend privately by controlling the internal environment and experience. He pointed out that although these experiences are

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certainly enjoyable, mobility is not usually produced through calm and relaxing activities. When a person's body or spirit is voluntarily pushed into an activity that a person considers valuable, a moment of flow occurs (Csikszentmihalyi, 1990).

The **flow** theory is part of a positive psychology movement that focuses on strengthening one's self and on supporting positive growth experiences and actions. It simply is to seek a flow experience that can enable individuals to take action for their positive mental health. This Zen-like and unified state of consciousness inherently reinforces the sense of self-efficacy and identity (Csikszentmihalyi, 1990).

Although work, physical activity, and time spent with others can all promote flow, many people do not focus on activities that make them happy. Thus, they ignore the return they get from work and waste time on those occupations that are more passive (Csikszentmihalyi, 1990). The fact that video games are designed for leisure and entertainment helps create an immersive "perfect storm," which often creates a beneficial, and sometimes an addictive experience for the players (Kelly, 2004; Pilke, 2004).

Flow theory states that a rich sensory experience helps create a rewarding experience for individuals. Because online video games are the intersection of various forms of storytelling, they create the ideal medium for creating mobile experiences. The game also allows individuals to act as agents in a virtual environment, meet one of the major requirements of traffic and basic needs for capabilities (Csikszentmihalyi, 1990; EL Deci & Ryan, 2009).

Flow has its flaws when it comes to games, however. There is a conflict between the desire

to spend time with others and participate in social activities on the one hand, and the need for time to be alone and in privacy. Although many people tend to desire solitude, most people tend to become frustrated and aimless when they are away from others. This is why the ability to independently create a flow experience is often the hallmark of those who succeeded creatively (Csikszentmihalyi, 1990). However, the amalgamation of the Internet and gaming technology produces social games that permit different types of social interaction and relationship for the users' enjoyment. While individuals experience games in relative loneliness, the games facilitate new types of interactions to fill a variety of the players' needs and desires (McGonigal, 2011; McKenna, Green, & Gleason, 2002).

There are various concepts of flow. The seven components of the flow determined by Csikszentmihalyi (1990) serve as an additional conceptual framework because Csikszentmihalyhi acknowledges that the existence of all elements is not necessary for the streaming experience. These components, called enjoyment elements, are suitable for various occasions and activities because the enjoyment of feelings is experienced in the same way by all human beings. These components and their relationship to video games are as follows:

Challenging activities that require skills. The activities that initiate the flow must be challenging enough to require focus. Competitive activities, including combative and social games in the context of MMORPGs, are excellent process leaders.

Changes in action and consciousness: Flow of action and consciousness refers to the integration of an individual with his or her actions. A person's relevant skills are required to cope

with and deal with the given situation so that they can integrate into the activity. In the settings of online video games and MMORPG games, this may lead to a lack of ideas for the controls on the game and a feeling of immersion in the presented actions and stories.

Clear goals and feedback: An immediate and easy-to-understand feedback system helps players assess how close the goal is and how he or she is progressing. The type of feedback mechanism or the feedback is less important than the symbolic information that indicates whether an individual has successfully achieved the aims of his efforts. Feedback systems in video games, as well as multiple types of information technology, provide players with data that helps promote informed decision-making, contribute to the integration of action, and awareness in clear and concise situations. However, when the feedback system lacks clarity, it may cause interference and distraction (Pilke, 2004).

Focus on current tasks: Humans are often susceptible to unwanted and unproductive thoughts and concerns if they have free time. Therefore immediate tasks and concerns that provide for structuring the free time can help improve the experience and eliminate negative impact disorders. As Pilke said (2004), because the purpose of video games is to create processes, they can force orders through internal functional frameworks and provide users with tasks and goals. MMORPGs are particularly suitable for this because repetitive tasks can still bring players in-game rewards, provide greater in-game literacy and fluency, and allow more opportunities to focus on a single or similar task (Rosenberg, 2011).

Control paradox: There is a difference between the experience of smooth enjoyment and

reality. Csikszentmihalyi (1990) explained that a person who fails in a game is different from someone who keeps working. The enjoyable sense of control in the activities designed to create a process depends on controlling in a challenging situation, not just on controlling. In a video game setting, the player is in a position to take risks that are not available in reality; are unrealistic or unacceptable in real-life, and experiences various settings while remaining in control of the situation and minimizing the risk.

Loss of self-awareness: While experiencing the flow, individuals often lose self-consciousness as they focus on their chosen activities. In addressing real-life issues or concerns, lack of attention or spiritual energy gives rise to self-awareness, which then becomes an irritating stimulus. Through this experience and the feeling of losing one's self when playing MMORPG, the self-consciousness within the individual may strengthen when the flow experience ends.

Transformation of time: The sense of time experienced in a flowing state may change. In the flow state, the individual may experience slowing down but may experience the opposite when emerging from the flowing state. This provides spiritual freedom, free from time constraints. In online video game settings, the time of immersion and change in the virtual world may also distort the player's subjective perception of the passage of time. Due to the lack of awareness of physical time, players often report having been in the game longer than expected (Hussain & Griffiths, 2009). This can be facilitated by the intrinsic characteristics of MMORPGs, including multi-person interactions and multi-level and set complexity (Wood, Griffiths, Chappel

& Davies, 2004; Wood et al., 2007; Wood, Griffiths, & Parke, 2007).

Rosenberg (2011) sees the flow process as the best outcome and manifestation of game literacy when he examines the game. Novak and Hoffman's (1997) survey project was developed through extensive survey tests to reduce the effectiveness of various flow concepts in the Internet use and has a strong correlation with the basic aspects of flow outlined by Csikszentmihalyi (1990).

Meeting the element of **challenge** is the activity drawn from one's spiritual energy and two requires individuals to stay focused and aware. In order to create a flow state in the game, the challenges presented must place players in a channel between boredom and anxiety. In this channel, concentration is given a sense of exercising control over the environment rather than being controlled by it. The **skills** of players must be fully developed through their previous gaming experience and their game literacy so that they can cope with the presented challenges (Rosenberg, 2011). The level of challenge and skill must be balanced in order to keep the player in conscious control of the situation without being either overly frustrated or overly anxious. Finally, the best among the concepts is that of the elements of players is the player's attitude toward the game. Players must be interested in the tasks of the game, rather than being indifferent to them (Csikszentmihalyi, 1990). Games have been shown to generate process experiences more frequently than work, because players will participate with an attitude of being interested (Novak & Hoffman, July 1997). Since the main principle of the game as a whole is that the players play them voluntarily, it follows that the players participating in the game will be

attentive and be concerned for the outcome of the game (McGonigal, 2011).

The relationship between motivation and flow

According to Woods (2014), all aspects of the motivation will affect the use of the

MMORPG and the game player's experience. This has been confirmed. Important but

decentralized research has begun to link the attitude, motivation, action, and gaming experience

of MMORPG players to the intersection of games and reality (McGonigal, 2011).

The game player's attitude toward the game and the reasons for using the MMORPGs have

shown an influence on the relationship between online and daily life and illustrate the

relationship between the game and real-life experience (Utz et al., 2012). MMORPG addiction

may have a serious negative impact on a player's life. MMORPG can predict and evaluate

several key factors such as curiosity, role-playing, sense of belonging, and obligation and reward

by players (Hsu, Wen, Wu, 2009). These findings show that the connection between the game

player's internal psychological and emotional states is of great significance to the game and the

reality.

The game player's motivation has also been shown to have a practical effect on the game's

experiences and actions. Self-reported incentives, such as achievements, socialization, and

immersion have been shown to affect the player's game behavior and the length and frequency of

gameplay based on avatar monitoring (Billieux et al., 2012). Different types of motivation may

lead game players to adopt different game modes, including those described by Suznjevic and

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Matijsevic (2010). These patterns, when impacted en masse by the large groups of players that

engage in MMORPGs, can have a real impact on network traffic (Suznjevic & Matijasevic,

2010).

More specifically, since these factors may be inextricably linked to the behavior in the game,

it is understandable that the various components of the flow—all of which do not have to be

experienced to constitute a flow experience—are associated with different motivational

components as the motivation to play temporally precedes the experience of playing. Players

must first be encouraged to participate in the game in some way, and their experience and

attitude towards playing—and the overall time they are willing to spend in further play—are

influenced by their internal experiences during the game. These experiences are described and

defined by the "optimal" experience of the flow. When these motives affect the flow, which in

turn affects the overall MMORPG, these motivations are mediated through the flow experience.

Therefore, this study will focus on the connections and causal relationships between the flow

components described by Csikszentmihalyi (1990) and the specific motivations of MMORPGs

as explained by Yee (2007).

Present study

Although several studies focus on the motivations (usually on its negative effects) of online

video game players, they try to describe the experiences of these players. However, there is no

complete report on the motivations, behaviors, and flow of MMORPG players in China.

Therefore, the purpose of this study is to fill in the gaps in the existing research. By investigating

MMORPG players in the present study, we explore the intrinsic motivation, extrinsic motivation.

This study examines the direct effects of the internal state of flow and motivation on

MMORPG gameplay, as well as the mediated effects of motivations (factors that lead players to

participate in MMORPGs) through the flow (the experiences had while in-game). The survey

used to measure these experiences is specific to MMORPGs, using specific motivations of

MMORPG developed by Yee (2006) and the elements of flow and the Internet usage developed

by Novak and Hoffman (1997) to accommodate activities of MMORPG players.

CHAPTER THREE:

RESEARCH HYPOTHESES

Structural Equation Model

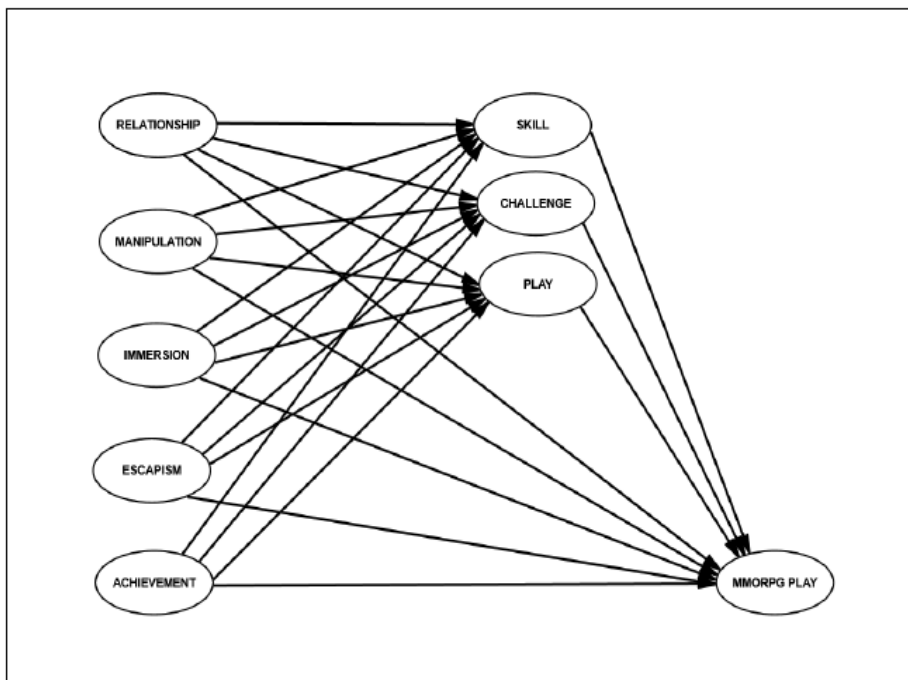**Figure 1: Hypothesized Structural Equation Model**

Figure 1 shows the hypothetical path between motivation and flow variables as they affect

the 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. Select an

established scale to assess each component of the motivation (relationship, manipulation, immersion, escapism, and achievement), as well as each flow element (skills, challenges, and play). The other questions regarding the amount of time spent participating in MMORPG games in different situations (normal weekdays, or vacation weeks, and so forth.) were selected to evaluate the components of the MMORPG play.

Hypothesized Paths

As shown both in the literature review and in the above figure, the motivations and flow are two separate structures related to various aspects of the MMORPG play. Both have a direct effect on the MMORPG players' habits, so it can directly affect the players' experience and habits, which can be easily expressed by the amount of time the player is willing to invest in the game.

Since the motivation for playing MMORPG games must precede the actual act of playing, the model hypothesizes that the motivation is mediated by the flow. This model shows both the direct effect of motivation and the effects mediated through flow in influencing MMORPG play, suggesting both a direct and a causal relationship.

Three models will be tested to assess the validity of the model—one that considers the direct and mediated effects of motivation in addition to the direct effects of flow, one that only considers mediation and another one that only considers the direct effects. In this way, we can determine which model is the best fit for the data, and which model best explains the connection

between the variables and the MMORPG play.

The following are three sets of hypotheses, namely the path 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:

H1: Motivations have a direct effect on MMORPG play.

H_{1a}: Relationships have a direct effect on time spent playing MMORPGs. (Relationships → MMORPG play)

H_{1b}: Manipulation has a direct effect on time spent playing MMORPGs. (Manipulation → MMORPG play)

H_{1c}: Immersion has a direct effect on time spent playing MMORPGs. (Immersion → MMORPG play)

H_{1d}: Escapism has a direct effect on time spent playing MMORPGs. (Escapism → MMORPG play)

H_{1e}: Achievement has a direct effect on time spent playing MMORPGs. (Achievement → MMORPG play)

H2: Flow experiences have a direct effect on MMORPG play.

H_{2a}: Skill has a direct effect on time spent playing MMORPGs. (Skill → MMORPG play)

H_{2b}: Challenge has a direct effect on time spent playing MMORPGs. (Challenge → MMORPG play)

H_{2c}: Play has a direct effect on time spent playing MMORPGs. (Play → MMORPG play)

H3: The effects of motivations on MMORPG play are mediated by the experiences of flow.

H$_{3a}$: The effects of relationship motivations on time spent playing are mediated by the experiences of skill. (Relationships → Skill → MMORPG play)

H$_{3b}$: The effects of relationship motivations on time spent playing are mediated by the experiences of challenge. (Relationships → Challenge → MMORPG play)

H$_{3c}$: The effects of relationship motivations on time spent playing are mediated by the experiences of play. (Relationships → Play → MMORPG play)

H$_{3d}$: The effects of manipulation motivations on time spent playing are mediated by the experiences of skill. (Manipulation → Skill → MMORPG play)

H$_{3e}$: The effects of manipulation motivations on time spent playing are mediated by the experiences of challenge. (Manipulation → Challenge → MMORPG play)

H$_{3f}$: The effects of manipulation motivations on time spent playing are mediated by the experiences of play. (Manipulation → Play → MMORPG play)

H$_{3g}$: The effects of immersion motivations on time spent playing are mediated by the experiences of skill. (Immersion → Skill → MMORPG play)

H$_{3h}$: The effects of immersion motivations on time spent playing are mediated by the experiences of challenge. (Immersion → Challenge → MMORPG play)

H$_{3i}$: The effects of immersion motivations on time spent playing are mediated by the experiences of play. (Immersion → Play → MMORPG play)

H$_{3j}$: The effects of escapism motivations on time spent playing are mediated by the experiences

of skill. (Escapism → Skill → MMORPG play)

H_{3k}: The effects of escapism motivations on time spent playing are mediated by the experiences

of challenge. (Escapism → Challenge → MMORPG play)

H_{3l}: The effects of escapism motivations on time spent playing are mediated by the experiences

of play. (Escapism → Play → MMORPG play)

H_{3m}: The effects of achievement motivations on time spent playing are mediated by the

experiences of skill. (Achievement → Skill → MMORPG play)

H_{3n}: The effects of achievement motivations on time spent playing are mediated by the

experiences of challenge. (Achievement → Challenge → MMORPG play)

H_{3o}: The effects of achievement motivations on time spent playing is mediated by the

experiences of play. (Achievement → Play → MMORPG play)

CHAPTER FOUR:

METHODOLOGY

Sample

The sample consisted of 305 individuals (120 males, 185 females). The amount of time the 68.2% participants claimed they spent playing per day during weekday was less than 10 hours, and the 36.7% of participants played 11-20 hours per day during the vacation time. 22.88% of participants claimed to be addicted to MMORPG games, indicating that nearly one quarter of participants recognized problematic usage.

Participants were recruited through social media. Most of the participants were recruited and selected by the MMORPG-related game club on Chinese website Baidu (www.baidu.com). All participants were recruited between August 19, 2018 and September 10, 2018.

Table 1. Sample Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	120	39.3	39.3	39.3
	Female	185	60.7	60.7	100.0
	Total	305	100.0	100.0	

Table 2. Sample Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-20	90	29.5	29.5	29.5
	21-25	155	50.8	50.8	80.3
	26-30	34	11.1	11.1	91.5
	31-35	14	4.6	4.6	96.1
	36-40	5	1.6	1.6	97.7
	40+	7	2.3	2.3	100.0
	Total	305	100.0	100.0	

Table 3. Hours Play Weekdays

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 10 hours	208	68.2	68.2	68.2
	11-20 hours	72	23.6	23.6	91.8
	21-30 hours	11	3.6	3.6	95.4
	> 31 hours	14	4.6	4.6	100.0
	Total	305	100.0	100.0	

Table 4. Hours Play Weekends

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 10 hours	110	36.1	36.1	36.1
	11-20 hours	112	36.7	36.7	72.8
	21-30 hours	50	16.4	16.4	89.2
	> 31 hours	33	10.8	10.8	100.0
	Total	305	100.0	100.0	

Survey Instrument

The questionnaire was derived from established tools designed to measure MMORPG motivations (Yee, 2006a) and technical use of flow (Novak & Hoffman, July 1997). The items for each scale were slightly modified to accommodate the direct purpose of the study and were reviewed by all researchers. In addition, demographic questions from Yee's (2007) study were included in our survey.

The questionnaire consisted of 33 Likert-scale questions related to the motivation of players for engaging in MMORPG games and their experience of immersive elements of challenge, skill and play. The 19 questions used to demographics, game habits and experiences (survey items can be found in Appendix A).

The following two key measures used in the survey are described below. All items in the final investigation were developed and adapted based on these measures, if not the verbatim use of the original measures.

MMORPG motivations. The items from Yee (2006) on motivation and experience refer to the five factors of MMORPG motivation. Other items in the original questionnaire were eliminated to reduce the burden on the participants. The responses to these items were recorded using a 5-point Likert-scale (1-strongly disagree, 3-neutral, 5-strongly agreed).

The five-factor structure of MMORPG motivation was tested by SPSS AMOS 22.0 confirmatory factor analysis. The results (shown in Figure 2) indicate that the model provides an

acceptable fit to the data (CFI = .922) (Bentler & Bonett, 1980). And all future analysis is based

on this structure.
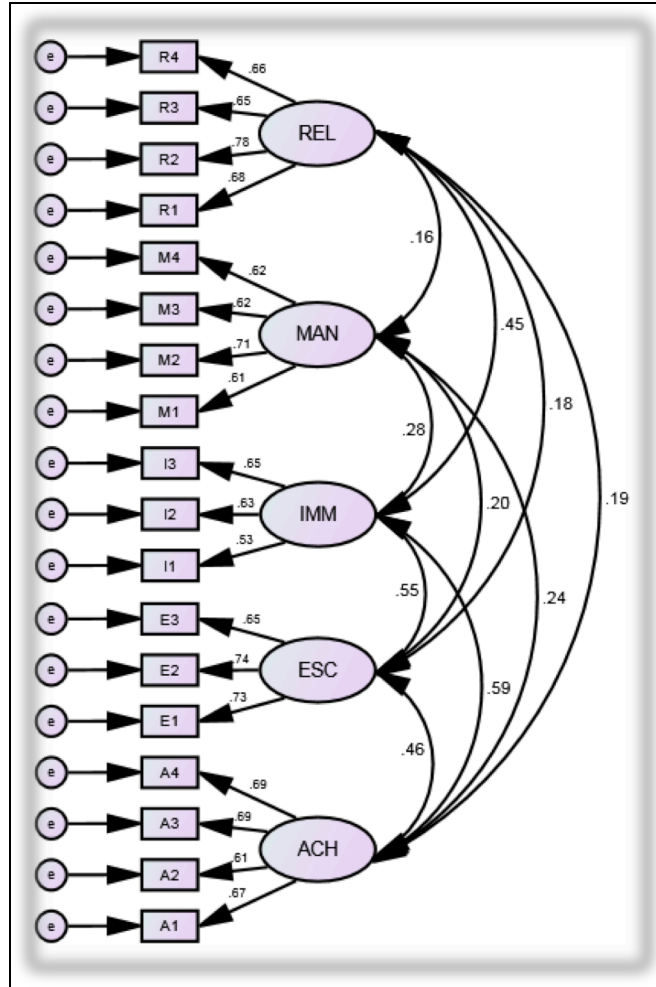
X^2 (125, N=305)=338.42, p=.000; CFI=.922, NFI=.872, RMSEA=.062
Figure 2: Confirmatory Factor Analysis (Motivations)

Flow. Novak and Hoffman's (1997) model for flow in human-computer interaction was used

to evaluate flow-related elements of skills, challenges and play grounded in Csikszentmihalyi's

theory. As Rosenburg (2011) suggests, because of their low length and correlation values, other

items of the instrument are not used to measure the opposite component of the eight-channel

flow model. In order to reduce the pressure on the participants, the original scale was modified in

this study, using a 5-point Likert-scale, which also applies to MMORPG games.

The confirmatory factor analysis results (Figure 3) show that there resulted in a significant

fit (CFI = .904). Therefore, all further analysis is based on the three-factor structure.
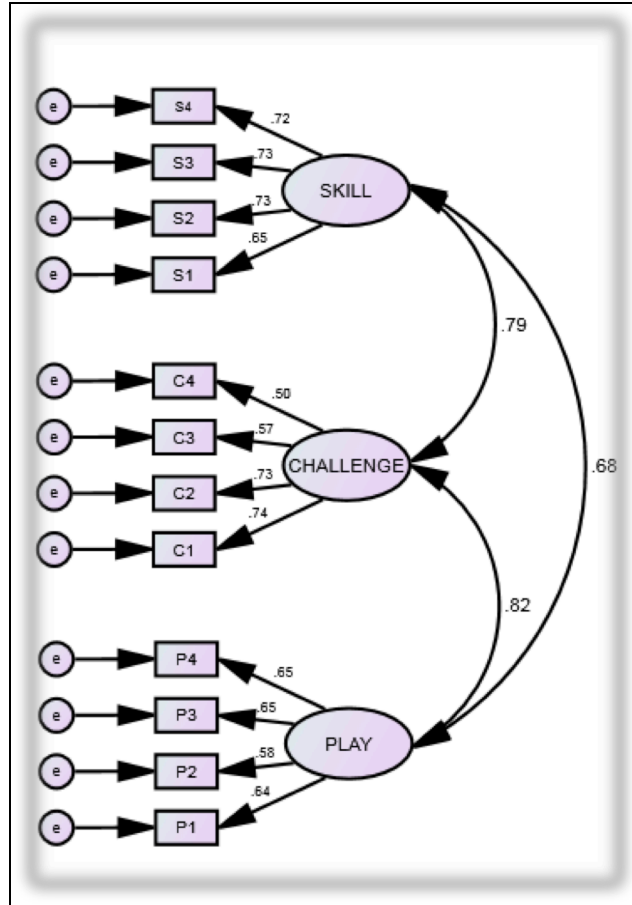
X^2 (51, N=305)=181.58, p=.000; CFI=.904, NFI=.903, RMSEA=.056
Figure 3: Confirmatory Factor Analysis (Flow)

CHAPTER FIVE:

RESULTS

Structural Equation Model Analysis

The research hypotheses were tested in two separate steps. In step 1, three competing models

were tested and the one model that best fits the data was retained for the testing of the specific

hypothesis in step 2. All tests were performed by SPSS AMOS 22.0 Structural Equation Model

(SEM) analysis.

The three models tested were: (1) a complete model, including all direct and mediated

effects of motivation, flow, and MMORPG play variables; (2) the mediation model, assuming

that all effects of motivation on MMORPG play are mediated by flow, thereby excluding

motivation direct effect on MMORPG play; (3) the non-mediation models exclude the mediated

effects of flow by allowing only the direct influence of motivation and flow on MMORPG play.

As shown in Figure 4, the SEM results show that the full model (CFI = .926) achieves better

data fit.
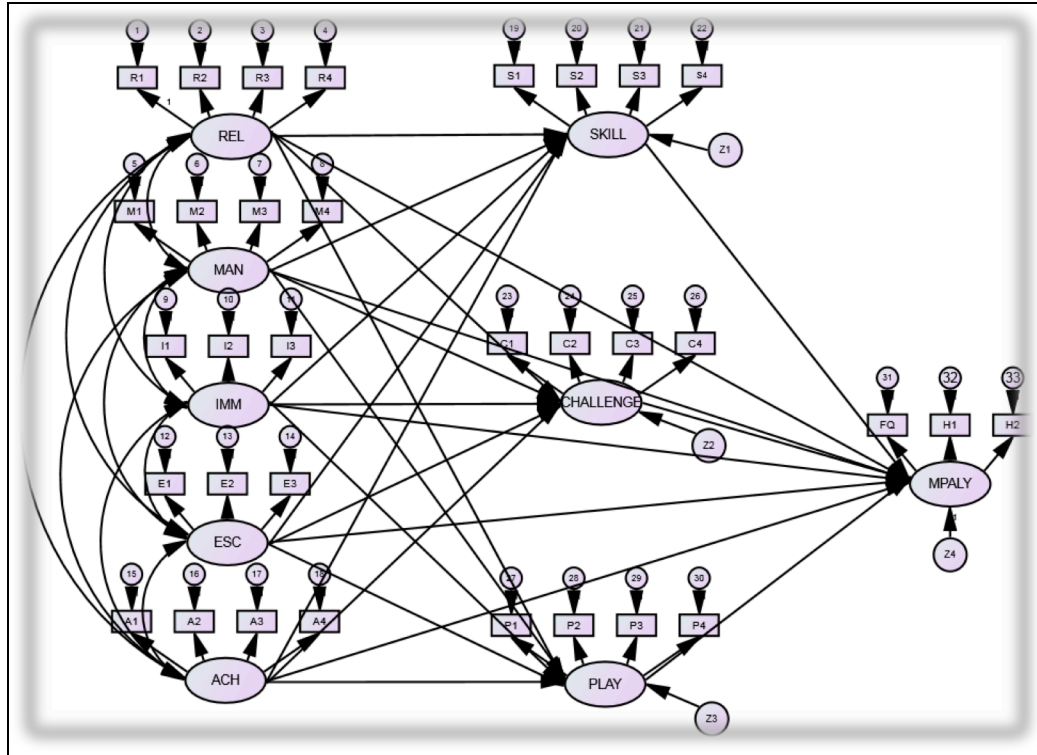
$X^2 = 812.25$, df = 459, p = .000, CFI=.926, GFI=.906, NFI=.857, RMSEA=.052
Figure 4: Structural Equation Model

Table 5: Standardized Regression Weights

			β	p
Relationship	→	Skill	.224	.005
Relationship	→	Challenge	.206	.009
Relationship	→	Play	.073	.389
Relationship	→	MMORPG Play	.016	.968
Manipulation	→	Skill	.196	.043
Manipulation	→	Challenge	.142	.143
Manipulation	→	Play	-.099	.344
Manipulation	→	MMORPG Play	-.130	.821
Immersion	→	Skill	.237	.090
Immersion	→	Challenge	.176	.202
Immersion	→	Play	.443	.006
Immersion	→	MMORPG Play	.400	.023
Escapism	→	Skill	-.019	.834

Table 5 (Continued)

Escapism	→	Challenge	-.006	.946
Escapism	→	Play	.129	.191
Escapism	→	MMORPG Play	.234	.658
Achievement	→	Skill	.324	.018
Achievement	→	Challenge	.492	***
Achievement	→	Play	.302	.042
Achievement	→	MMORPG Play	.381	.021
Skill	→	MMORPG Play	.675	***
Challenge	→	MMORPG Play	.378	.018
Play	→	MMORPG Play	.400	.009

*** p<.001

Hypotheses Testing

H1: Direct effect of motivation on MMORPG play. Figure 5 focuses on the first set of

hypotheses, which examine the direct effect of motivation on MMORPG play. Each path

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

Only two of the five direct paths were statistically significant by the standard regression weight

(SRW): (1) Immersion → MMORPG play (β= .40, p <. 05); (2) Achievement → MMORPG play

(β= .38, p < .05), supporting H1-c and H1-e respectively. The rest of the path were failed to

reach significance, so H1-a, H1-b, and H1-d are not supported.
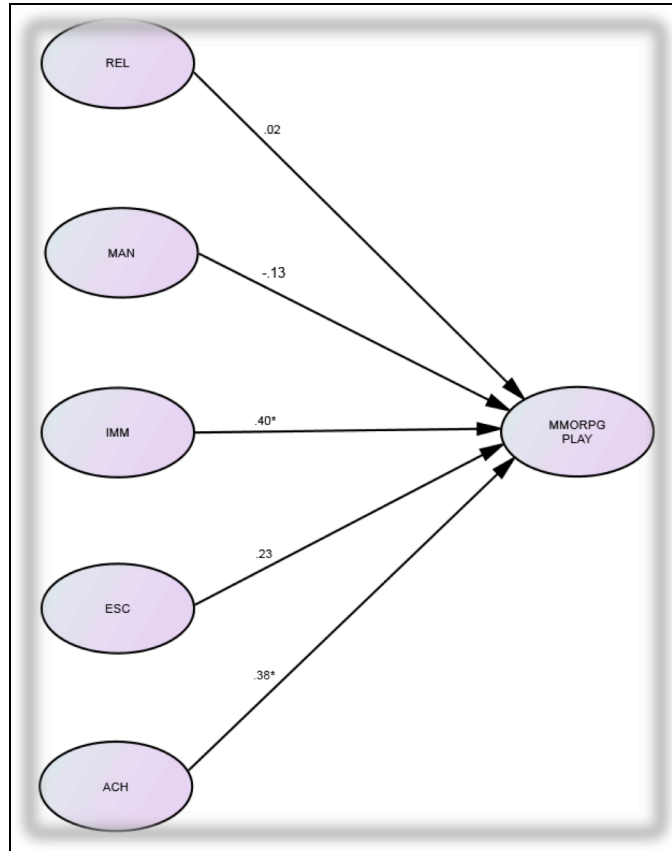
Figure 5: Direct Effects of Motivation on MMORPG Play

H2: Direct effect of flow on MMORPG play. Figure 6 discusses a second set of

hypotheses about the direct effect of flow on MMORPG play. All paths connecting the flow

mechanism and MMORPG play were show as important. The strongest of these elements is the

Skill → MMORPG play (β = .68, p <. 05), followed by the Play → MMORPG play (β = .40, p <.

05), then the Challenge → MMORPG play (β = .38), p <.05). Therefore, H2-a, H2-b and H2-c

are all supported.

Figure 6: Direct Effects of Flow on MMORPG Play

H3: Mediated effects of motivation via flow on MMORPG play. It should be noted that
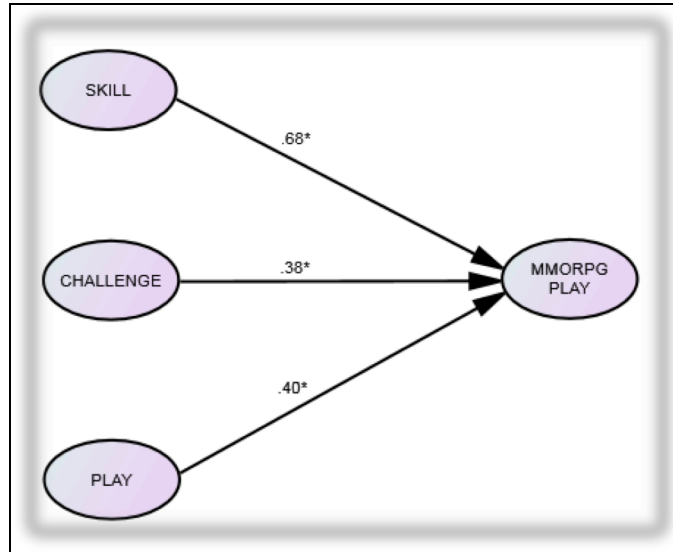
in order to support mediation hypotheses, the effects of motivation on flow and the effects of

flow on MMORPG play must be statistically significant. Figure 7 shows the SEM results for the

role of the flow as a mediator for the relationship and MMORPG play. The results show that the

hypotheses related to the relationship received mixed support. Both H3-a and H3-b were

supported (H3-a: Relationship → Skills, $\beta = .22$, p <.05; Skill → MMORPG play, $\beta = .68$, p <.05;

H3-b: Relationship → Challenge, $\beta = .21$, p <.05; Challenge → MMORPG play; $\beta = .38$, p <.05).

However, H3-c is not supported (H3-c: Relationship → Play, $\beta = 0.07$, p =.389 , Play →

MMORPG play, $\beta = .40$, p <.05).
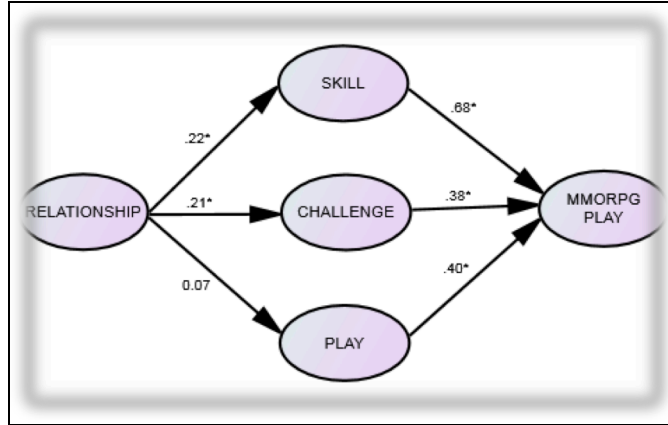
Figure 7: Mediated Effects of Relationship via Flow

Hypotheses related to manipulation received mixed support from analyses. As shown in Figure 8, the results show that only H3-d was supported (H3-d: Manipulation → Skills, β = .20, p <.05; Skills → MMORPG play; β = .68, p <.05). But both H3-e and H3-f were not supported (H3-e: Manipulation → Challenge, β = .14, p =.143, Challenge → MMORPG Play, β = .38, p <.05; H3-f: Manipulation → Play, β = -.10, p = .344; Play → MMORPG play, β = .423, p <.05).
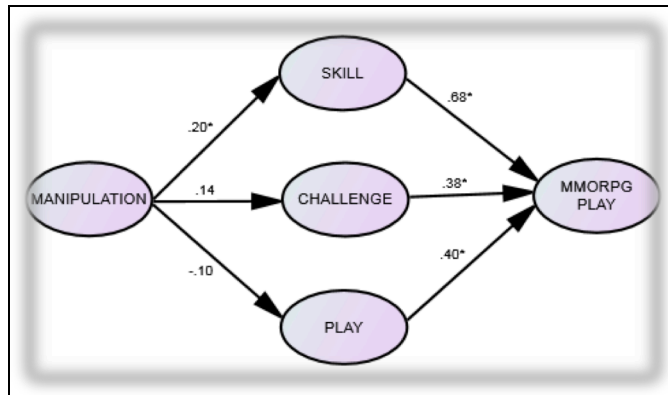
Figure 8: Mediated Effects of Manipulation via Flow

The hypotheses related to immersion also received mixed supports. As shown in Figure 9, only H3-i was supported (H3-i: Immersion → Play, β = .44, p <.05; Play → MMORPG play; β = .40, p <.05). However, neither H3-g nor H3-h were supported (H3-g: Immersion → Skill, β

= .24, p =.090, Skill → MMORPG play, β = .68, p <.05; H3-h: Immersion → Challenge, β = .18,

p = .202; Challenge → MMORPG play, β = .38, p < .05).

Figure 9: Mediated Effects of Immersion via Flow

None of the hypotheses related to escapism were supported, as shown in Figure 10 (H3-j:

Escapism → Skills, β = -.02, p = .834; Skills → MMORPG play, β = .68, p <. 05; H3-k:

Escapism → Challenge, β = -.01, p = .946; Challenge → MMORPG play; β = .38, p <.05; H3-l:

Escapism → Play, β = .13, p = .191, Play → MMORPG play, β = .40, p <.05).
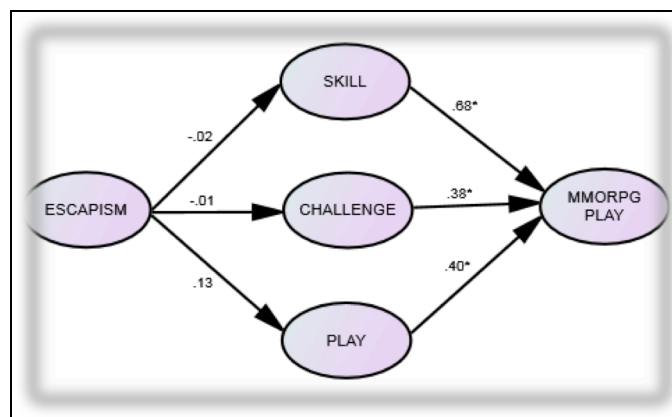
Figure 10: Mediated Effects of Escapism via Flow

Finally, as shown in figure 11, all hypotheses pertaining to achievement were supported

(H3-m: Achievement → Skills, β = .32, p <.05; Skills → MMORPG play, β = .68, p <.05; H3-n:

Achievement → Challenge , β = .49, p <.05; Challenge → MMORPG play; β = .38, p <.05; H3-o:

Achievement → Play, β = .30, p <.05, Play → MMORPG play, β = .40, p <.05).
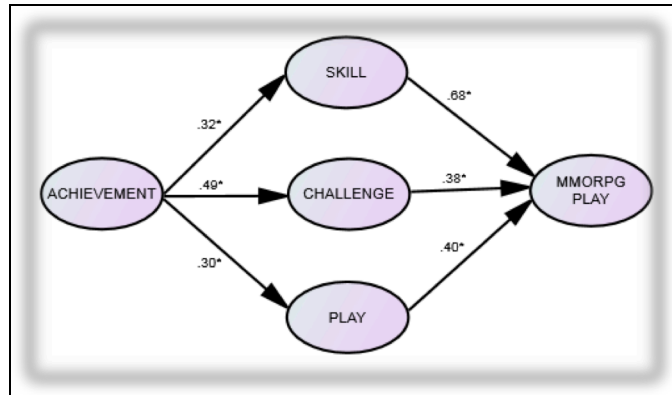
Figure 11: Mediated Effects of Achievement via Flow

CHAPTER SIX:

DISCUSSION AND RECOMMENDATIONS

Discussion

The initial questions that are important to researchers were: What is the relationship between the motivations of MMORPG gamers and their experiences of flow? What motivational factors are mediated by the flow mechanism? Overall, the models, including both the mediated effects of flow and the direct effects of motivation and flow on MMORPG play, proved to be the most appropriate for the data, consistent with the proposed set of hypotheses.

Table 6: Hypothesis Testing 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)	No 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).	Supported
H1-d	Escapism has a direct effect on time spent playing (Escapism → MMORPG Play).	Not supported
H1-e	Achievement has a direct effect on time spent playing (Achievement → MMORPG Play).	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

Table 6 (Continued)

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
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).	Not supported
H3-d	The effects of Manipulation motivations on time spent playing are mediated by the experiences of skill (Manipulation → Skill → MMORPG Play).	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).	Not 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).	Not supported

Table 6 (Continued)

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).	Not 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 (Achievement → Play → MMORPG Play).	Supported

The results of this study have several notable elements, mainly the escapism of the motivations on MMORPG games. Yee (2006, 2007) suggests that escapism and all aspects of the desire to play the games are the full range of motivations to engage in MMORPG play. However, the results of this study show that there is no significant relationship between the motivation and the frequency of play, nor does it support the mediated effect of escapism on the MMORPG play. This may be explained by saying that in today's rapid development of the network, the society, and the market, in response to the gradual increase in social/personal pressure in China, are simultaneously focusing on decompression. However, in addition to video games, there are other activities that can afford a temporary escape or decompression and are accepted and liked by people in China. In other words, Chinese youth may not choose to play video games when they

seek an escape route. Meanwhile, more research is needed to determine the role of escapism as a driving force for gaming research.

It is worth noting that, regarding the relationship between flow and MMORPG play, skills have the highest Standardized Regression Weights (SRW) and, therefore, appear to be the most important component of flow. In future research, special attention should be paid to the skills component, perhaps as a motivator for the Chinese players (Woods, 2014).

The results of this study also support the importance of flow as a MMORPG playing concept. In addition to being closely intertwined with motivations; play, challenge, and skill, as flow mechanisms, are powerful predictors of MMORPG playing behaviors. In general, the internal state of motivation is a difficult concept to quantify, as illustrated by many similar studies (Woods, 2014). The concept of flow is used to observe the effects of MMORPG on game users, enabling a more tangible experience of video games to the participants, rather than responding to descriptions of illusory motivations.

In summary, the results of this study show significant direct and indirect (mediated) effects of motivations, flow, and MMORPG play, as well as the importance of flow-related games as the factors that have an effect on the MMORPG players. Overall, the current findings indicate that there are complexities involved in the study of MMORPGs and their players and the need for more research to identify these complexities and create more multifaceted models to study these phenomena.

Research and Pragmatic Meaning

The present research indicates that MMORPG players are highly motivated by immersion and achievement. Both relationship and achievement have great potential to enhance the experiences of flow in the game. Game developers can shape the game-mechanics and marketing of the games around these factors while ignoring in-game devices that emphasize escapism. In the future game development, this may mean focusing more resources on better adjusting game's levels of achievements.

In terms of research, this study proposes a more comprehensive view of the game experience, which can explain multiple variables or a set of variables. It supports the idea that in addition to having a direct effect, the motivation of MMORPG players is mediated by the experiences in the impact of the game. Future research may consider the mediation process when considering the use and experiences of video games. Moreover, this may not be the unique concept exclusive to MMORPGs (Woods, 2014).

The results of this study suggest that the motivations of MMORPG players are either partially or fully driven by the flow mechanisms proposed by Nowak and Hoffman (1997). This points for the positive and mediated effects of motivation on MMORPG playing habits and the strong positive effects of the three flow mechanisms on the time invested in playing MMORPG. This suggests that players with different motivations or multiple combinations of those motivations may continue to increase their time investment in the game in combining Skill, Challenge and Play.

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Those findings can be useful to the game development companies, the write MMORPG

writers, agents who sell games to players, and those who study games, psychology, and

sociology.

For those who wish to conduct further research, this study makes several important

implications. Perhaps the most significant finding of the study is the complexity of the internal

state of MMORPG players and the causal relationship between motivation and experiences of

flow. This study reveals the importance of internal conditions for behaviors, the complexity of

the motivations for participating in MMORPG games, and the experience of playing the game.

Researchers may also consider ignoring escapism as an incentive because it has no impact on the

game experiences or behaviors of Chinese players, as the hypotheses of this study suggests.

Deleting escapism or less important motivating factors may leave room for researchers to spend

more time to focus on achievement as a motivating factor.

Limitations

Although the structural equation model of these variables provides valuable data on the

relationship between all variables, it does not adequately explain the causal relationships in the

model. The path in the model does reflect that our hypotheses about the causal relationship are

supported by the data and are consistent with previous research. Future research should attempt

to test the different effects of motivations mediated through a flow mechanism between Chinese

and American players, perhaps through the broader flow model proposed by Csikszentmihalyi

(1990), and those models based on his work and methods (Jackson & Eklund, 2002), or other

motivational models suggested and tested by Yee (2007). Also, the sample used in this study is a

convenient sample. So the age distribution of the sample may also be unrepresentative.

CHAPTER SEVEN:
CONCLUSIONS

Based on the results of this study, the motivation for the participants to invest in MMORPG games is much more complicated than indicated by the previous literature. The specific motivations of MMORPG (relationship, manipulation, immersion, escapism, and achievement) through the elements of flow (skill, challenge, and play) were tested for their direct effects and the indirect (mediated) effects on MMORPG games. The study found that escapism has no direct or indirect (mediated) effect on Chinese players' investment of MMORPG play. The causal relationship between motivations and experience also affects time investment but is effective only when mediated by flow.

In this study, the incentive for achievement is the most influential motivation. Its effect on the behavior of MMORPG games is important both directly and indirectly. Its importance cannot be underestimated, especially for the behavioral influence of Chinese players, because it is the only motivation whose effects the data supports indirect and mediated forms.

Also, the elements of flow (skill, challenge, and play) were found to have the significant direct effects on MMORPG play. It indicates that in the MMORPG games, the players in the sample often experienced the flow state facilitated by a balance of skill, challenge, and play. This further supports the complexity of the player experience, motivation, and behavior. This also

supports the claim that MMORPG games effectively allow the players to experience optimal states of flow (Woods, 2014).

Overall, the most important findings of this study are the complex internal states of motivation and flow and the proof of the complex effects of MMORPG's Chinese users' playing behavior. Video games and MMORPGs have come a long way since the 1950s, and the link between player internal state and behavior has become complex and has created a rich and vibrant experience for virtual world players.

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APPENDICES

Appendix A: Survey Questionnaire

Survey Questionnaire (English)

Thank you for participating in this survey. The purpose of this survey is to better research the

motivations and experiences of video game players, especially for massively multiplayer online

role-playing game players. You are invited to participate in this study because you have been 18

years old and are in college in China. Your participation is entirely voluntary, and you have the

right to refuse to answer any questions for any reason without penalty. This study has no

foreseeable risks, and your personal identity and information will be kept confidential in this

study.

If you have any questions, please contact Jiaxin Liu at jiaxin@mail.usf.edu. The survey will

begin only after you click on the "Yes, I've read the Informed Consent and I agree to participate

in the survey."

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

1. Yes   2. No

MMORPG motivations

(1) Relationship

2. I find myself having meaningful conversations with others in game.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

3. I have made some good friends in the game.

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

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

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

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

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

(2) Manipulation

6. I like to taunt or annoy other players.

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

7. I like to dominate other characters/players.

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

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

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

9. I scam other people out of money or equipment.

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

(3) Immersion

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

<div align="center">1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree</div>

11. I like the feeling of being part of a story.

<div align="center">55</div>

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

12. I make up stories and histories for my characters.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

(4) Escapism

13. I like the escapism aspect of the game.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

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

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

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

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

(5) Achievement

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

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

17. I try to optimize my XP gain as much as possible.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

18. I like to feel powerful in the game.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

19. Doing massive amounts of damage is satisfying.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

Flow

(1) Skill

20. I am skilled at playing MMORPGs.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

21. I consider myself knowledgeable about moves, techniques, and strategies in/for the

MMORPGs I play.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

22. I find it easy to play MMORPGs.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

23. I know how to do what I want when playing MMORPGs.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

(2) Challenge

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

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

25. MMORPGs challenge me to perform to the best of my ability.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

26. MMORPGs provide a good test of my skills.

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1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

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

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

(3) Play

28. I feel mentally flexible when playing MMORPGs.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

29. I feel creative when playing MMORPGs.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

30. I feel spontaneous when playing MMORPGs.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

31. I feel playful when playing MMORPGs.

1.Strongly Disagree 2.Disagree 3.Neutral 4.Agree 5.Strongly Agree

MMORPG Play and Demographic Information

32. I would consider myself addicted to the game.

1. Yes   2. No

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

1. Yes   2. No

34. The most rewarding/satisfying experience I've had in the past 30 days was:

1. Something that happened in the game

2. Something that happened in real life

35. The most annoying/infuriating experience I've had in the last 30 days was:

1. Something that happened in the game

2. Something that happened in real life

36. Gender of the respondent.

1.Male   2. Female

37. What is your age?

1. 18-20   2. 21-25   3. 26-30   4. 31-35   5. 36-40   6.Above 40

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

1.Never   2.Rarely   3.Sometimes   4.Often   5. 2-3 Times a Week   6.Daily

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

1.10 hours or less   2.11-20 hours   3.21-30 hours   4.31 hours or more

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

1.10 hours or less   2.11-20 hours   3.21-30 hours   4.31 hours or more

　　亲爱的受访者您好，感谢您参与此次问卷调查。这份问卷调查是我研究生毕业论文的一个重要组成部分，研究的主要目的是为了探讨游戏玩家对于玩视频游戏，尤其是大型多人在线角色扮演游戏玩家的动机和经验。您的参与完全匿名且不涉及个人隐私，并且您可以拒绝回答任何您觉得不便回答的问题。此外，所有收集的数据仅用于学术研究目的，您贡献的信息完全保密，且只有本研究人员可获取。本研究非测验，没有对与错之分，也没有任何相关风险。

　　如果您有任何疑问，请联系本文的研究人员。再次感谢您的参与和支持。

　　MMORPG 也就是大型多人在线角色扮演游戏，是一种很受欢迎的网络视频游戏种类。列如：LOL，DOTA，绝地求生（吃鸡），魔兽世界，诛仙，剑网三，地下城勇士，等等，都是这一类型的网络视频游戏。

1. 您现在或曾经玩过大型多人在线角色扮演游戏（MMORPG）吗？（如：LOL，吃鸡，DOTA，魔兽世界，诛仙，剑网三，地下城勇士，等等）

　　1. 是

　　2. 否

2. 我发现自己在游戏中与其他人进行了有意义的对话。

　　1. 非常不同意

　　2. 不同意

　　3. 中立

　　4. 同意

　　5. 非常同意

3. 我在游戏中结交了一些好朋友。

　　1. 非常不同意

　　2. 不同意

　　3. 中立

　　4. 同意

　　5. 非常同意

4. 我会在游戏中和朋友们谈论个人问题。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

5. 当我遇到现实生活中的问题或危机时，游戏中的朋友会给予我支持。

   1. 非常不同意

   2. 不同意

   3. 中立

   4. 同意

   5. 非常同意

6. 我喜欢嘲弄或惹恼其他玩家。

   1. 非常不同意

   2. 不同意

   3. 中立

   4. 同意

   5. 非常同意

7. 我喜欢支配其他游戏角色/游戏玩家，从而使自己占领优势。

   1. 非常不同意

   2. 不同意

   3. 中立

   4. 同意

   5. 非常同意

8. 我喜欢操纵别的游戏玩家，从而使他们按照我的意愿行事。

   1. 非常不同意

   2. 不同意

3. 中立

4. 同意

5. 非常同意

9. 我会用钱或装备欺诈别人。

   1. 非常不同意

   2. 不同意

   3. 中立

   4. 同意

   5. 非常同意

10. 我喜欢和我的游戏角色一起尝试新的任务和个性。

    1. 非常不同意

    2. 不同意

    3. 中立

    4. 同意

    5. 非常同意

11. 在网络视频游戏中，我喜欢那种融入故事的感觉。

    1. 非常不同意

    2. 不同意

    3. 中立

    4. 同意

    5. 非常同意

12. 在网络视频游戏中，我喜欢为我的游戏角色创造。

    1. 非常不同意

    2. 不同意

    3. 中立

    4. 同意

5. 非常同意

13. 我喜欢网络游戏可以让我逃避现实。

    1. 非常不同意

    2. 不同意

    3. 中立

    4. 同意

    5. 非常同意

14. 玩网络视频游戏让我暂时忘记一些现实生活中的问题。

    1. 非常不同意

    2. 不同意

    3. 中立

    4. 同意

    5. 非常同意

15. 玩网络视频游戏让我发泄并减少白天工作生活带来的压力。

    1. 非常不同意

    2. 不同意

    3. 中立

    4. 同意

    5. 非常同意

16. 在网络视频游戏中，获得最好的游戏装备对我来说非常重要。

    1. 非常不同意

    2. 不同意

    3. 中立

    4. 同意

    5. 非常同意

17. 在网络视频游戏中，我尽可能地优化我的 XP 经验值。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

18. 在网络视频游戏中，我喜欢通过和他人对战，从而感到自己比他人强大。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

19. 在网络视频游戏中，通过给对手造成大量伤亡，令我感到满意和满足。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

20. 我擅长玩大型多人网络角色扮演类游戏（MMORPG），如：LOL，DOTA，吃鸡，剑网三，诛仙，地下城勇士，等等。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

21. 我对我现在正在玩的 MMORPG 游戏的动作，技巧和策略了如指掌。如：LOL，DOTA，吃鸡，剑网三，诛仙，地下城勇士，等等。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

22. 我发现玩 MMORPG 很容易。

   1. 非常不同意

   2. 不同意

   3. 中立

   4. 同意

   5. 非常同意

23. 我知道在玩 MMORPG 时我该怎么做。

   1. 非常不同意

   2. 不同意

   3. 中立

   4. 同意

   5. 非常同意

24. 掌握 MMORPG 对我来说很容易。

   1. 非常不同意

   2. 不同意

   3. 中立

   4. 同意

   5. 非常同意

25. 面对 MMORPG 游戏中的挑战，我能发挥最佳表现

   1. 非常不同意

   2. 不同意

3. 中立

4. 同意

5. 非常同意

26. MMORPG 很好的测试了我的游戏技能。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

27. 我发现玩 MMORPG 可以扩展我的游戏能力。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

28. 我在玩 MMORPG 游戏时感觉精神抖擞。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

29. 玩 MMORPG 游戏时，我觉得它激发了我的创造力。

1. 非常不同意

2. 不同意

3. 中立

4. 同意

5. 非常同意

30. 在玩 MMORPG 游戏时，我是自发的去玩 MMORPG 游戏。

　　1. 非常不同意

　　2. 不同意

　　3. 中立

　　4. 同意

　　5. 非常同意

31. 玩 MMORPG 游戏时，我感到有趣和好玩。

　　1. 非常不同意

　　2. 不同意

　　3. 中立

　　4. 同意

　　5. 非常同意

32. 我认为自己沉迷于游戏。

　　1. 是

　　2. 否

33. 我认为和现实中的朋友们相比，我和游戏中的朋友们关系更亲近。

　　1. 是

　　2. 否

34. 在过去的 30 天里，我获得的最有价值/最令人满意的经历是：

　　1. 游戏中发生的事情

　　2. 在现实生活中发生的事情

35. 在过去的 30 天里，最令我心烦/最令我愤慨的经历是：

　　1. 游戏中发生的事情

　　2. 在现实生活中发生的事情

36. 您的性别是：

1. 男

2. 女

37. 你的年龄是：

    1. 18-20 岁

    2. 21-25 岁

    3. 26-30 岁

    4. 31-35 岁

    5. 36-40 岁

    6. 大于 40 岁

38. 您多久玩一次大型多人在线角色扮演游戏(MMORPG)？

    1. 从不玩

    2. 很少玩

    3. 偶尔玩

    4. 每周玩超过 3 次

    5. 每天玩

39. 在正常的工作/上学时间，您通常每周花多少小时玩大型多人在线角色扮演游戏（MMORPG）？

    1. 10 小时或更短

    2. 11-20 小时

    3. 21-30 小时

    4. 31 小时或更长时间

40. 在假期，您通常每周花多少小时玩大型多人在线角色扮演游戏（MMORPG）？

    1. 10 小时或更短

    2. 11-20 小时

    3. 21-30 小时

    4. 31 小时或更长时间

Appendix B: Letter of IRB Approval

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

September 4, 2018

Jiaxin Liu
School of Advertising and Mass Communications
Tampa, FL 33612

RE: **Exempt Certification**
IRB#: Pro00036632
Title: Online MMORPG Games in China: Player Motivations and the Mediating Role of Flow

Dear Ms. Liu:

On 9/3/2018, the Institutional Review Board (IRB) determined that your research meets criteria
for exemption from the federal regulations as outlined by 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.

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
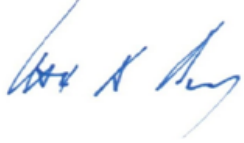the Belmont Report and with USF HRPP policies and procedures.

Please note, as per USF HRPP Policy, once the Exempt determination is made, the application is
closed in ARC. Any proposed or anticipated changes to the study design that was previously
declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation
of the change. However, administrative changes, including changes in research personnel, do not
warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not
limit your ability to conduct your research project.

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,

Mark Ruiz, PhD, Vice Chairperson
USF Institutional Review Board