

6-18-2022

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xiaobo Ke
City University of Hong Kong, xiaoboke-c@my.cityu.edu.hk

Christian Wagner
City University of HK, c.wagner@cityu.edu.hk

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https://aisel.aisnet.org/ecis2022_rp/105

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EVERYDAY GAMING INDUCES AMATEUR ESPORTS PARTICIPATION THROUGH COMMITMENT

Research Paper

Xiaobo Ke, City University of Hong Kong, Hong Kong, China, xiaoboke-c@my.cityu.edu.hk

Christian Wagner, City University of Hong Kong, Hong Kong, China, c.wagner@cityu.edu.hk

Abstract

Electronic sports (esports), as a professionalized form of organized video game competition, enjoys incredibly high popularity worldwide. Its current limitation necessitates the emergence of amateur esports, a specific form of esports designated for mass gamer participation. As amateur esports is in the initial developmental stage, mass gamers' transformation into amateur participants is the current focus. However, we know little about this transformation due to scant research. Thus, this study attempts to understand the transformation of mass gamers into amateur esports participants by investigating the relationship between mass gamers' everyday gaming behaviors and their amateur esports participation. Specifically, relying on uses and gratifications theory, this study learns what everyday gaming behaviors impact amateur esports participation intention. Furthermore, this study also explains the mechanism of these influences through the lens of commitment. This study contributes to research and practice regarding amateur esports development.

Keywords: Amateur Esports, Mass Gamers, Uses and Gratifications, Commitment, Professionalized Play.

1 Introduction

Electronic sports (esports) refers to a professionalized form of organized video game competition supported by information technologies and involving spectatorship (Ke and Wagner, 2020; Ke et al., 2021). Professional esports¹ is the currently dominant development mode with a vast audience base (Qian et al., 2020; Zhao and Zhu, 2021). However, this development mode has its significant limitations. One is the small revenue size of the esports markets (despite remarkably high popularity) compared with that of traditional sports markets (Carnmer et al., 2021; Tang et al., 2020). Moreover, Newzoo (2021) forecasts a declining growth rate of the esports market, which implies its vulnerable sustainability. To tackle current challenges and further establish the sustainability of esports, developing amateur esports² is a critical measure. Amateur esports can expand the revenue sizes of the esports market by further releasing the consumption potential of fans (Niko, 2019; Seo, 2016) and help exert the network effect of the whole esports ecosystem (Citi, 2019). Recently, many organizations have started to build

1 Professional esports is a form of esports where elite gamers (as professional players) participate in professional tournaments and casual gamers attend these tournaments as spectators and fans (Pizzo et al., 2018 ; Qian et al., 2020)

2 Amateur esports is an esports form that is for casual players, where the mass gamers participating in these esports competitions as the players (Ke et al., 2021) (say, the university or the game platform held esports competitions for mass gamers and amateur esports competitions on online platforms). The specific online example for amateur esports can be found on this platform: <https://smash.gg> and the ESL Open initiative.

up amateur esports, such as Tencent's "Esports for All" project in 2021³ and a new tournament architecture of electronic sports league (ESL), namely ESL Open.

Despite its importance for esports development, amateur esports is still regarded to be in its nascence (Carnmer et al., 2021; Schwartz, 2017). Moreover, we have not obtained enough knowledge of amateur esports success. For example, we know little about the role transformation of mass gamers into amateur esports participants. As mass gamers are the primary group for amateur engagement (Ke et al., 2021), it is crucial for amateur esports to transform mass gamers into amateur esports participants effectively. In other words, it is important for amateur esports to attract mass gamers to participate in amateur esports competitions. However, extant esports studies on mass gamers center on antecedent factors influencing their everyday gaming activities (e.g., Jang and Byon, 2020; Tang et al., 2020) and their consequent consumption behaviors, such as gambling (e.g., Brooks and Clark, 2019; Macey et al., 2020) and spectating (e.g., Jang and Byon, 2019; Macey and Hamari, 2018). Limited research efforts are found in understanding the change of mass gamers from everyday gaming to amateur esports participation. Without a clear understanding of this change, we would fail to develop amateur esports successfully. Thus, to bridge this research gap and facilitate amateur esports development, this study explores this transformation by investigating the relationship between everyday gaming behaviors and amateur esports participation. Specifically, this study attempts to answer two key research questions: (1) What kinds of everyday gaming behaviors impact the decision-making of amateur esports participation? (2) Through what mechanism do these everyday gaming behaviors influence this decision-making?

With these research questions, this study raises a research model drawn on uses and gratifications (U&G) theory (Katz et al., 1973) and commitment (Becker, 1960; Meyer and Allen, 1991, Scanlan et al., 2016). The U&G theory is a time-honored media use-related theory at the individual level that determines user motivations or needs by focusing on what people do with the specific media (Stafford et al., 2004). The U&G theory upholds a chief tenet regarding media use and user needs. That is, the media use behavior depends on the user's need and the user's expectation that this need will be satisfied by the media (Ruggiero, 2000). With this understanding, the U&G theory provides a cohesive link between user needs and media use behaviors (Ali-Hassan et al., 2015). Thus, in the current research context (i.e., video games as entertaining media), this U&G theory offers us solid theoretical support to identify and conceptualize the specific everyday gaming behavior from the perspective of gamers' needs. Thus, grounded in the U&G theory and existing literature, this study identifies three dimensions of everyday gaming behaviors from the perspective of gamers' needs: hedonic play, social play, and professionalized play. In order to learn the rationale mechanism that underlines the influences of these dimensions of everyday gaming behaviors on amateur esports participation, this study relies on the commitment, the psychological state in which an individual persists in a consistent line of activity (Becker, 1960; Meyer and Allen, 1991, Scanlan et al., 2016). Many prior studies support that commitment is one of the significant manifestations closely connected to recreational specialization and consumption professionalization, such as amateur esports participation (e.g., Beaton et al., 2011; Scott and Shafer, 2001; Seo, 2016; Tsaur and Liang, 2008). Therefore, commitment is a suitable lens for us to explain the influences of everyday gaming behaviors on the individual's amateur esports participation.

This research enriches the understanding of amateur esports success. Specifically, we mainly explain that everyday gaming activities positively impact the transformation of mass gamers into amateur esports participants. Furthermore, through commitment, we also help researchers learn about the mechanism of this conversion of mass gamers from everyday gaming to amateur esports participation. For video game designers, this study provides initial guidelines about game mechanics that fulfill specific everyday gaming behaviors and encourage mass gamers to attend amateur esports. Besides, this study also helps esports curators realize that highly committed gamers should be the targeted group for amateur esports marketing.

³ https://www.sohu.com/a/446896168_116018

2 Theoretical Backgrounds

This section provides a set of theoretical backgrounds to help the reader have a clear understanding of everyday gaming behavior and its classification in the esports video game context (based on uses and gratifications theory) as well as commitment and its classification.

2.1 Everyday gaming behaviors of esports video games

To explore the nature of everyday gaming behaviors of esports video games, this study turns to the uses and gratifications (U&G) theory (Katz et al., 1973). A chief tenet of the U&G theory is that media use is selective and motivated by an individual's rational self-awareness of his/her own needs, and his/her expectation that those needs will be fulfilled by media (Ruggiero, 2000). In IS field, media use is also usually defined as an individual user's employment of one or more features of a media system to perform a task in purpose (Burton-Jones and Straub, 2006). In this vein, the "performing task in purpose" echoes the purpose/need gratification (satisfied by media) in the U&G theory. These understandings jointly implicate that media use could be categorized from the perspective of the user's purpose/need gratification (Ali-Hassan et al., 2015, Burton-Jones and Straub, 2006). In this case, the U&G theory provides us with systematic theoretical support to identify and conceptualize specific everyday gaming behaviors from the perspective of gamers' needs.

Thereby, grounded in the U&G theory and the extant literature on (game) media use, this study identifies three typical dimensions of everyday gaming behaviors of esports video games: hedonic play, social play, and professionalized play. Hedonic play refers to playing esports video games for fun, time-killing, relaxing, escaping, and enjoyment (Quan-Haase and Young, 2010; Shao, 2009). Social play is defined as playing esports video games to build new social relations (i.e., making new friends), identify individuals with shared interests, and stay in touch with existing friends and acquaintances (Ali-Hassan et al., 2016; Quan-Haase and Young, 2010). These two everyday gaming behaviors are common in many video game contexts (e.g., Lee et al., 2021; Martončík and Lokša, 2016). However, professionalized play is a kind of everyday gaming behavior that has become common and typical currently because of the popularity of esports. With the accessibility of the professional standards and attitudinal professionalism (say, through watching esports competitions), mass gamers could also learn and pursuit these professional standards and implement professionalism in their everyday gaming activities (Stebbins, 2020). Thus, we can observe the emergence of professionalized play. Professionalized play indicates playing esports video games to systematically pursue career-like progress in the game engagement and to strive for the standard of excellence and attitudinal professionalism (based on Seo, 2016).

In this study, professionalized play consists of three first-order constructs: skill mastery (i.e., play for striving the game skills improvement) (Seo, 2016, Yee, 2006), competitive advancement (i.e., play for the advancement of competition status, like ranking) (Detrovics et al., 2011; López-Fernández, 2020), and personal growth (i.e., play for developing one's potential, growing and expanding as a better self) (Huta and Ryan, 2010; Ryff et al., 1995). These three first-order constructs are derived from the main features of professionalization. Based on the literature, the main features of professionalization include attitudinal professionalism. Attitudinal professionalism is defined as a set of individual values and belief systems that advance both personal competency and the social status of an individual (Lee, 2014). This reflects the players' ambition of skill mastery at the professional level and advancement in esports video games. With this professionalism, in professionalized play, mass gamers play video games for skill development and advancement (López-Fernández, 2020). Thus, this attitudinal professionalism as the feature of professionalization indicates that professionalized play should cover skill mastery (to reflect personal competency excellence) and competitive advancement (to reflect the advancement of social status). Besides, literature also claims that one of the fundamental features that underpins professionalized consumption of video games is the celebration of self-improvement and fulfillment (Seo, 2016). This reflects the players' need to develop the best in themselves in professionalized play (Huta and Ryan, 2010). Thus, the professionalized play should also cover the construct reflecting personal development, namely the personal growth in this study. To sum up, given that

professionalization features cover multiple dimensions (skill development and status advancement of attitudinal professionalism and personal development), this study develops the relevant first-order constructs as the reflective dimensions for professionalized play: skill mastery, competitive advancement, and personal growth.

2.2 Commitments

Commitment is defined as a psychological state in which an individual persists in or continues a consistent course of activities over time (Becker, 1960; Meyer and Allen, 1991, Scanlan et al., 2016). Compared with the general motivation theory, commitment is a specific motivational force that focuses on binding an individual to a course of activities in the long term (Meyer et al., 2004; Meyer and Herscovitch, 2001). With this “binding” focus, the construct of commitment is usually applied in leisure and sports studies to understand the user’s recreational specialization and amateur participation. Given that the current research context also embodies the concept of amateur participation, the commitment is a more suitable theoretical lens (compared with general constructs of motivation) for this study to understand the mechanism regarding amateur esports participation.

Many studies conceptualize commitment as a multi-dimensional construct (e.g., Gustafsson et al. 2005; Meyer and Allen, 1991; Scanlan et al., 2016; Xiao et al., 2020). From the motivation perspective of self-determination theory (SDT) (Deci and Ryan, 1985), this study proposes a two-dimensional structure of commitment (i.e., autonomous commitment and controlled commitment), which attempts to reconcile and cover the extent types of commitments in the literature. This currently proposed classification aims to help readers understand the existing commitment types from a theoretical perspective, namely SDT. According to Sheldon et al. (2003), the quality of individual motivation varies from autonomous to controlled (Benedetti et al., 2015; Williams et al., 1996). Thus, there are two main motivations: autonomous motivation and controlled motivation. Thus, two types of commitment are proposed based on these two motivations: autonomous commitment and controlled commitment.

Autonomous commitment. Autonomous motivation concerns actions that are experienced as emanating from and/or congruent with self (Weinstein and Ryan, 2010). This motivation has an internal perceived locus of causality, such as identified and intrinsic reasons (Ryan and Connell, 1989). Autonomous motivation reflects values or interests congruence (Little, 1989), and one feels like originally initiated when enacting them (deCharms, 1968). Hence, based on the autonomous motivation, this study defines *autonomous commitment* as the psychological state in which individuals intrinsically desire and resolve to have a binding to their acts induced by identified and/or intrinsic reasons (Based on Meyer and Herscovitch, 2001, Scanlan et al., 2013; Sheldon et al., 2003; Deci and Ryan, 2004). For instance, the autonomous commitment to an activity (say, playing an esports game) would be established out of inherent love and/or the meaningfulness to the self.

Controlled commitment. Controlled motivation appears when the goal pursuit is triggered by external and/or introjected reasons (Moran et al., 2012; Sheldon and Elliot, 1998). Controlled motivation is formed due to self-imposed pressures (say, feelings of shame or pride) and/or to external contingencies and controls (Deci and Ryan, 2000; Ryan and Connell, 1989). This motivation has an external perceived locus of causality, such as extrinsic and introjected reasons (Ryan and Connell, 1989). Thus, taking the controlled motivation as a base, this study defines controlled commitment as the psychological state in which individuals feel extrinsically motivated to have a binding to their acts for induced by extrinsic and/or introjected reasons (Based on Meyer and Herscovitch, 2001, Scanlan et al., 2013; Sheldon et al., 2003; Deci and Ryan, 2004). For example, the controlled commitment to an activity (say, playing an esports game) would be built due to the motivation for avoiding loss and/or feelings of guilt.

3 Hypotheses Development

Eight hypotheses were generated to explore relationships among three typical types of everyday gaming behaviors, two types of commitment, and gamers’ intention to participate in amateur esports competitions. The specific research model is displayed in Figure 1.

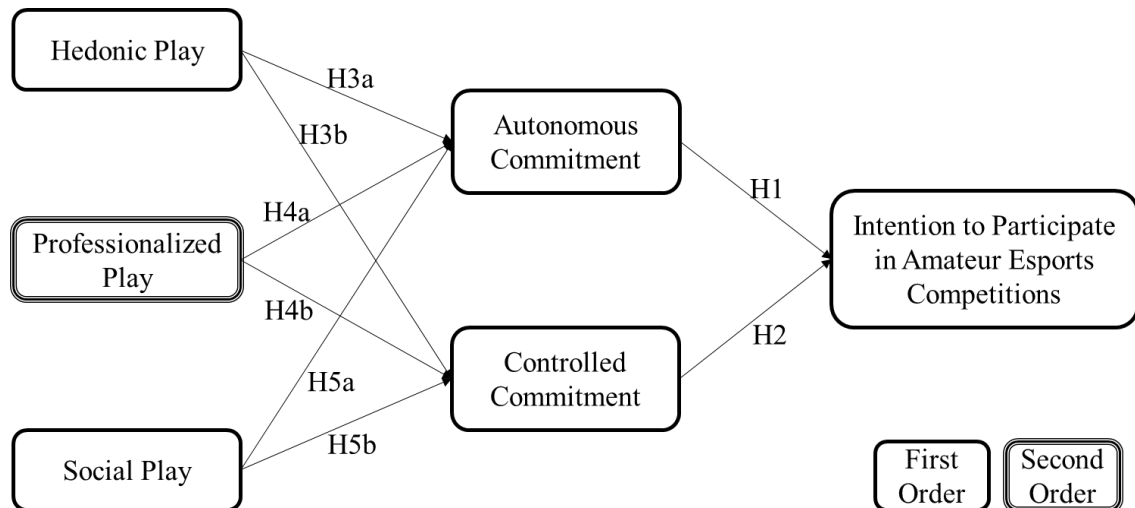


Figure 1. Research model

3.1 Commitments enhance intention to participate in amateur esports

Autonomous commitment highlights the inherent willingness of individuals to be committed, which is the dedication-based mechanism explaining the commitment developed and maintained (Kim, 2017). This reflects the internal reasoning factors (say, identified and intrinsic reasons) motivating individuals to be bonded to an object and relevant activities (Scanlan et al., 2016). Thus, mass gamers with a high autonomous commitment to esports video games display their personal satisfaction, passion, and identification in everyday gaming activities. This also involves the emotional attachment to the esports video game engagement (Xiao et al., 2021). Thus, we argue that autonomous commitment would lead to an extended and professionalized consumption of esports video games, namely amateur esports competition. Because the development of autonomous commitment to esports games is usually along with professionalized consumption activities (Scott and Shafer, 2001; Seo, 2016). Besides, the committed gamers' satisfaction, personal love, and identification with esports games would also make them more willing and confident to try and pursue the further extension of esports video game consumption, such as attending amateur esports competitions (Wang and Ou, 2013; Stebbins, 2020). Hence, Hypothesis 1 (H1) was formulated as follows:

H1. Mass gamers' autonomous commitment is positively associated with their intention to participate in amateur esports competitions.

Controlled commitment highlights the external factors resulting in the committed attitude and behaviors. These factors include the recognition of the cost and social reasons (e.g., others' expectations) without sufficient self-internalization (Sheldon et al., 2003). Others' expectations and/or sunk costs invested in everyday gaming may lead to their committed stay in the esports video games. However, this commitment is a constrained-based mechanism explaining their persistence in the everyday gaming of video games without inherent tendency (Kim, 2017). Despite the constrained reasons for engaging in video games, we still argue that this controlled commitment also contributes to the decision-making of participating in amateur esports competitions. From the cost-efficient perspective, participation in amateur esports competition is a measure to achieve the more effective use of cost invested in the video games (e.g., learning cost) (Wang and Ou, 2013), because the prior learning cost for casual gaming is also applicable to amateur esports. In addition, despite mass gamers with high controlled commitment, they also hope to justify the rationality that their commitment to video game engagement is out of desire (Gomez and Sanchez, 2013; Kim and Son, 2009; Zhou et al., 2012). In this sense, participating in amateur esports competitions would be a potential measure for them to do so. Because they may discover the unique attractiveness of amateur esports through joining the competitions, and hence increasing their self-motivation to stay in everyday gaming activities. Hence, Hypothesis 2 (H2) was formulated as follows:

H2. Mass gamers' controlled commitment is positively associated with their intention to participate in amateur esports competitions.

3.2 Everyday gaming builds up commitments to esports video games

Three typical dimensions of everyday gaming behavior of esports video games are identified, namely the hedonic play, social play, and professionalized play. The hedonic play focuses on the gaming behaviors seeking for the various hedonic values in the esports video game engagement, such as fun, escapism, and relaxation (Ali-Hassan et al., 2015). These hedonic values serve as an inherent affective reward promoting mass gamers' satisfactory attitudes and passion toward the esports video game engagement (Kim, 2017; Lee et al., 2003; Przybylski et al., 2009), which leads to the autonomous commitment to the esports video game engagement (Zhou et al., 2012; Wang et al., 2019). Hence, Hypothesis 3a (H3a) was formulated as follows:

H3a. Hedonic play is positively associated with the autonomous commitment of mass gamers.

Hedonic play leads to an enjoyable experience, and hence increasing the positive emotions. Controlled commitment indicates a bond to object and activity is established due to external factors, such as the recognition of cost invested and risk of leaving. Prior studies have verified that happy people are less risk averse (Myers, 2000). This suggests that, in hedonic play, mass gamers might not consider risky and troublesome when shifting the esports video game in play to others, namely less controlled commitment (Hellén and Sääksjärvi, 2011). Besides, considering the minimal cost and effort involved in obtaining "evanescent" entertaining benefits (Green and Jones, 2005, Stebbins, 2020), it also is less likely for mass gamers to build controlled commitment to the esports video game in hedonic play. Hence, Hypothesis 3b (H3b) was formulated as follows:

H3b. Hedonic play is negatively associated with the controlled commitment of mass gamers.

Professionalized play highlights personal growth, skill mastery, and competitive advancement in esports video game engagement. With these gaming behaviors, mass gamers would also experience desirable value that invokes positive affect (say, sense of achievement from competitive advancement because of social comparison) (Could et al., 2008; Lee et al., 2003). Moreover, mass gamers also obtain the self-fulfillment feeling and deeper understanding of gaming activities because of the personal growth to better self and the systematic pursuit for skill development (Seo, 2016; Suh et al., 2017). These durably rewarding experiences obtained in the professionalized play would also lead to an increase in the autonomous commitment because of the passion and meanings acknowledgement induced by these experiences. Hence, Hypothesis 4a (H4a) was formulated as follows:

H4a. Professionalized play is positively associated with the autonomous commitment of mass gamers.

Professionalized play reflects the serious pursuit of digital leisure (Seo, 2016). Perseverance and significant efforts are necessary factors for the performance of professionalized gameplay (Could et al., 2008; Stebbins, 2020). The perseverance and significant effort of professionalized play, as a learning cost, is a type of non-transferable investment (Kim and Son, 2009). Given the learning cost invested in the professionalized play, mass gamers are likely to be "locked-in" the current esports video game engagement (Kim and Son, 2009), and hence developing the controlled commitment to the current esports video game engagement for the avoidance of the potential loss (say, prior non-transferable investment) or additional cost of leaving the game. Hence, Hypothesis 4b (H4b) was formulated as follows:

H4b. Professionalized play is positively associated with the controlled commitment of mass gamers.

Social play centers on the gameplay behaviors seeking for the various social values in the esports video game engagement, such as relationship building and maintaining, social capital accumulation, and companion (Chiu and Huang, 2017). Many video games encourage in-game social practices by adding socialized features, such as voice communication (Du et al., 2019). These features facilitate social play in the video game and may also result in the autonomous commitment to game engagement. Because the pleasant interpersonal companionship from the social play adds value for mass gamers, and hence increasing their inherently emotional attachment to these relationships (Wang et al., 2019), which in

turn enhances their inherent desire to persist in the video game engagement (Patterson and Smith, 2003; Lin et al., 2018). Hence, Hypothesis 5a (H5a) was formulated as follows:

H5a. Social play is positively associated with the autonomous commitment of mass gamers.

Besides, social play is also likely to facilitate mass gamers’ controlled commitment to esports video game engagement with the accumulation and reinforcement of interpersonal relationships. Based on social influence theory, mass gamers tend to follow and conform to the expectation of the major references, such as friends, to commit certain behaviors, and hence stay in the esports video games (Kelman, 1958; Kim and Min, 2015; Lin and Lu, 2015). Thus, the influence and/or expectation of friends may make mass gamers sense the demanding feeling from the relationships, and hence developing controlled commitments to the esports video game engagement (Kim, 2017). Hence, Hypothesis 5b (H5b) was formulated as follows:

H5b. Social play is positively associated with the controlled commitment of mass gamers.

4 Research Methodology

An online survey was conducted to test the proposed research model. Whenever possible, we used previously validated measures in our data collection. Measurements for hedonic play were adapted from the Chiu and Huang (2017); we adapted instruments of Ali-Hassan et al. (2015) to measure social play. Instruments of three first-order constructs of professionalized play, namely competitive advancement, personal growth, and skill mastery, were self-developed based on Demetrovics et al. (2011), Ryff (1989), Ryff et al. (1995), Seo (2016), and Yee (2006). Measurements for two commitments (i.e., autonomous commitment and controlled commitment) were adapted from Meyer and Herscovitch (2001) and Scanlan et al. (2016) with necessary development based on Sheldon et al. (2003) and Deci and Ryan (2000). The dependent variable (i.e., intention to participate in amateur esports competitions) was measured with the use of adapted items from Hu et al. (1999) and Lee et al. (2005). All items were measured via a seven-point Likert scale ranging from strongly disagree 1 to strongly agree 7. Items used in this study can be found by visiting this [link](#).

Following the procedures of Moore and Benbasat (1991), we conducted the card-sorting exercises to test the reliability and validity of items used for measuring constructs. After two rounds, two judges finally achieved a 100% of correct hit ratio and Kappa rate, indicating a satisfactory level of items’ quality. In addition, another two bilingual PhD students (English and Chinese) with IS research backgrounds performed the translation (from English version to Chinese version) with the guidance of Douglas and Craig (2007).

Survey data were collected on the platform of Baidu QSS that is one of the popular online survey platforms in China. As League of Legends is one of the most popular and influential esports games worldwide (especially in China), Chinese gamers of League of Legends were invited to complete a questionnaire online. The incentive is issued to the users who successfully complete the questionnaire. Finally, 393 valid responses were collected, representing an 87.33% response rate. Demographics are summarized in Table 1. Variables displayed in Table 1 are also used as control variables in the research model by including them in the structural equation model analysis.

Variables	Indicators	Frequency	%	Variables	Indicators	Frequency	%
Gender	Male	320	81.4	League of Legends Gaming Frequency	Rarely	4	1.30
	Female	73	18.6		1-3 time yearly	28	9.12
Age	20 & below	11	2.8		4-6 time yearly	80	26.06
	21-25	131	33.3		7-9 time yearly	165	53.75
	26-30	174	44.3		Once monthly	30	9.77
	31-35	56	14.2		2-3 time monthly	0	0
	36-40	18	4.6		Once weekly	24	7.82
	41-45	3	0.8		2-3 time weekly	87	28.34
Education	Middle school & below	9	2.4		4-6 time weekly	33	10.75
	High school	22	5.6		Everyday	19	6.19

	College	143	36.4	Esports Watching Frequency	Never	3	.8
	Bachelor	206	52.4		Rarely	13	3.3
	Master & above	14	3.6		1-3 time yearly	58	14.8
Income	2000 Yuan & below	7	1.8		4-6 time yearly	52	13.2
	2001-4000 Yuan	22	5.6		7-9 time yearly	39	9.9
	4001-6000 Yuan	72	18.3		Once monthly	34	8.7
	6001-8000 Yuan	128	32.6		2-3 time monthly	56	14.2
	8001-10000 Yuan	97	24.7		Once weekly	52	13.2
	10001-12000 Yuan	37	9.4		2-3 time weekly	45	11.5
	12001-14000 Yuan	16	4.1		4-6 time weekly	25	6.4
	14001 Yuan & above	14	3.6		Everyday	16	4.1

Table 1. Demographic Information (N=393)

5 Results

The research model was then examined by partial least squares (PLS) analysis (using SmartPLS 3.0). The PLS analysis is able to be applied to estimate the loadings of indicators on constructs of interest (hence assessing the construct validity; Suh & Wagner, 2017) and to verify the causal relationships among constructs in the multilayers model (Fornell & Bookstein, 1982). Moreover, PLS is appropriate and feasible for the early stages of theory development and verification (Barclay et al., 1995; Chin et al., 2003), which was the situation in the study presented in this paper.

5.1 Measurement validation

We first assessed the reliability and validity of measurements. As shown in Table 2, factor loading scores on their expected factors are all above 0.7. Furthermore, factor loading scores are also much higher on their expected factors than on other factors. These indicate the acceptable discriminant and convergent validity of the indicators (Barclay et al., 1995; Hulland, 1999).

	HP	SP	CA	SM	PG	AC	CC	IPAE
HP1	0.834	0.486	0.368	0.438	0.461	0.553	0.291	0.204
HP2	0.823	0.469	0.347	0.458	0.396	0.519	0.265	0.177
HP3	0.806	0.408	0.340	0.395	0.395	0.556	0.213	0.141
SP1	0.464	0.759	0.403	0.508	0.480	0.420	0.398	0.363
SP2	0.458	0.734	0.321	0.489	0.508	0.517	0.388	0.315
SP3	0.368	0.728	0.350	0.480	0.491	0.449	0.394	0.297
SP4	0.336	0.723	0.400	0.384	0.447	0.428	0.366	0.354
CA1	0.365	0.393	0.826	0.482	0.527	0.365	0.453	0.398
CA2	0.312	0.381	0.821	0.482	0.526	0.341	0.459	0.437
CA3	0.389	0.394	0.776	0.511	0.424	0.439	0.312	0.348
CA4	0.298	0.410	0.744	0.566	0.511	0.353	0.487	0.413
SM1	0.375	0.466	0.515	0.788	0.510	0.482	0.414	0.398
SM2	0.359	0.473	0.499	0.782	0.504	0.477	0.439	0.422
SM3	0.484	0.509	0.493	0.769	0.523	0.496	0.394	0.371
SM4	0.413	0.526	0.498	0.768	0.502	0.453	0.378	0.394
PG1	0.372	0.512	0.529	0.527	0.821	0.486	0.514	0.460
PG2	0.407	0.527	0.500	0.507	0.770	0.473	0.482	0.412
PG3	0.403	0.521	0.455	0.527	0.754	0.495	0.497	0.413
PG4	0.402	0.472	0.470	0.469	0.754	0.441	0.441	0.384
AC1	0.529	0.471	0.366	0.463	0.488	0.777	0.326	0.309
AC2	0.489	0.474	0.348	0.498	0.435	0.764	0.301	0.320

AC3	0.529	0.501	0.400	0.498	0.508	0.754	0.363	0.311
AC4	0.524	0.449	0.315	0.427	0.446	0.754	0.283	0.244
AC5	0.425	0.443	0.348	0.433	0.433	0.735	0.350	0.257
CC1	0.290	0.407	0.440	0.384	0.495	0.329	0.806	0.491
CC2	0.172	0.351	0.394	0.352	0.453	0.296	0.773	0.475
CC3	0.289	0.427	0.409	0.423	0.461	0.386	0.770	0.450
CC4	0.101	0.297	0.412	0.362	0.422	0.176	0.752	0.463
CC5	0.317	0.509	0.432	0.476	0.552	0.429	0.743	0.454
IPAE1	0.146	0.377	0.437	0.436	0.443	0.272	0.523	0.806
IPAE2	0.181	0.378	0.430	0.410	0.401	0.301	0.410	0.805
IPAE3	0.171	0.344	0.386	0.413	0.403	0.345	0.505	0.802
IPAE4	0.230	0.356	0.399	0.416	0.447	0.319	0.480	0.791
IPAE5	0.121	0.346	0.370	0.361	0.458	0.287	0.492	0.789

Note: HP means Hedonic Play, SP means Social Play, CA means Competitive Advancement, SM means Skill Mastery, PG means Personal Growth, AC means Autonomous Commitment, CC means Controlled Commitment, IPAE means Intention to Participate in Amateur Esports Competition

Table 2. Confirmatory Factor Analysis

Another indicator for evaluating convergent validity is that the average variance extracted (AVE) for each construct should be equal to 0.5 or above (Fornell and Larcker, 1981). Table 3 displays that all of the AVE values range from 0.542 to 0.674. Furthermore, the square roots of AVE on the diagonal are all above 0.73, which are greater than all other cross-correlations (Fornell and Bookstein, 1982). This indicates that all constructs capture more construct-related variance than error variance. Besides, heterotrait-monotrait ratios of correlations (HTMT) are all below 0.9, which indicates the established discriminant validity of constructs (Hair et al., 2017; Henseler et al., 2015). Taken together, these results demonstrate adequate convergent and discriminant validity.

	Constructs	CR	AVE	VIF	1	2	3	4	5	6	7	8
1	HP	0.870	0.573	2.030	0.821	0.748	0.552	0.683	0.664	0.839	0.383	0.263
2	SP	0.871	0.628	2.302	0.554	0.736	0.659	0.845	0.874	0.804	0.67	0.576
3	CA	0.879	0.592	2.085	0.429	0.498	0.792	0.814	0.794	0.583	0.66	0.608
4	SM	0.861	0.674	2.549	0.524	0.634	0.645	0.777	0.84	0.768	0.644	0.623
5	PG	0.898	0.638	2.761	0.510	0.656	0.63	0.656	0.775	0.765	0.77	0.658
6	AC	0.858	0.601	2.40	0.661	0.619	0.471	0.614	0.612	0.757	0.511	0.454
7	CC	0.859	0.604	2.049	0.313	0.526	0.544	0.524	0.625	0.429	0.769	0.716
8	IPAE	0.825	0.542	1.834	0.212	0.451	0.505	0.51	0.539	0.382	0.607	0.799

Note: CR is composite reliability; Diagonal elements in bold font are the square root of the AVE from their indicators; Elements below diagonal are correlations between constructs; Elements above diagonal are HTMT results between constructs; HP means Hedonic Play, SP means Social Play, CA means Competitive Advancement, SM means Skill Mastery, PG means Personal Growth, AC means Autonomous Commitment, CC means Controlled Commitment, IPAE means Intention to Participate in Amateur Esports Competition.

Table 3. Reliability, Correlation Matrix, AVE, VIF and HTMT

Further, construct reliability was assessed by identifying the composite reliability scores, all of which are above 0.825 (see Table 3), suggesting acceptable internal consistency. To ensure that multicollinearity did not be a problem, collinearity diagnostics were also conducted. Analysis results (see Table 3) show that the scores of variance inflation factors (VIF) (ranging from 1.834 to 2.761) are all well within the recommended area (Hair et al., 1995). Thus, the multicollinearity problem is unlikely to be a concern.

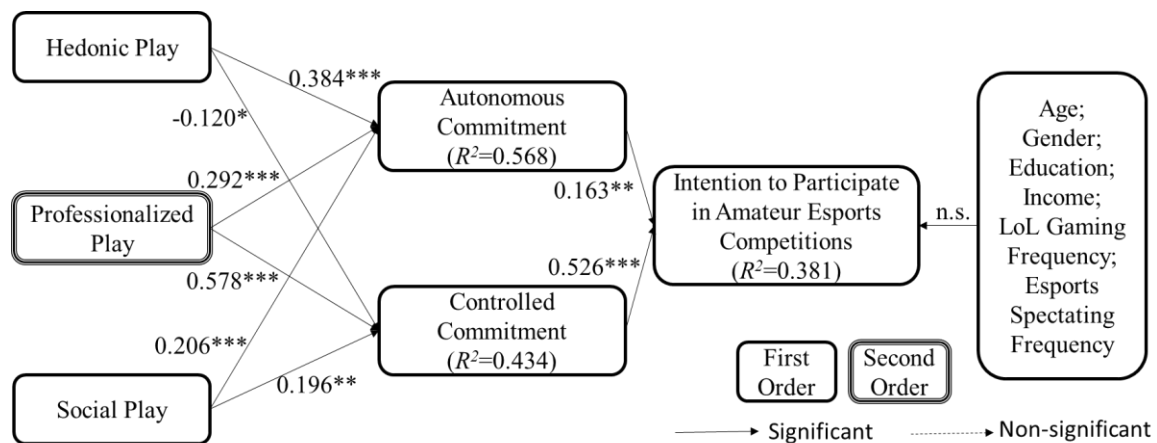
In addition, we first applied the statistical analysis of the correlation matrix to test the severity of common method bias (CMB). The correlation matrix (see Table 3) shows that the highest inter-construct correlations are below 0.67, whereas CMB is usually evidenced by extremely high correlations (i.e., $r > 0.90$) (Bagozzi et al., 1991). Furthermore, a marker-variable technique proposed by Lindell and Whitney (2001) is also used for the CMB check. In this technique, a marker variable is implemented in this study. This marker variable is theoretically unrelated to the variables of this study. Because this

marker variable is assumed to have no relationship with the variables in this study, CMB can be assessed based on the correlation between the marker variable and the variables of this study (Malhotra et al., 2006). For a detailed explanation, please read Lindell and Whitney (2001). The results of Lindell and Whitney’s method indicated that most of the correlations among substantive factors remain significant. To sum up, the CMB issue is unlikely to be a problem in this study.

5.2 Structural model

The structural model was examined by using SmartPLS 3.0 (two-tailed test with bias corrected and miss value is replaced with means). Results in Figure 2 indicate that the research model is supported by the data.

The autonomous commitment ($B=0.163, p<0.01$) and controlled commitment ($B=0.526, p<0.001$) positively affect intention to participate in amateur esports competitions, thus supporting H1 and H2. The autonomous commitment is significantly influenced by hedonic play ($B=0.384, p<0.001$), professionalized play ($B=0.292, p<0.001$), and social play ($B=0.206, p<0.001$), verifying H3a, H4a, and H5a. As hypothesized (i.e., H3b), hedonic play ($B=-0.120, p<0.05$) have significantly negative effects on controlled commitment. In addition, professionalized play ($B=0.578, p<0.001$) and social play ($B=0.196, p<0.01$) significantly positively influence controlled commitment, which supports H4b and H5b. The variances explained (R^2) of autonomous commitment, controlled commitment, and intention to participate in amateur esports competitions are 56.8%, 43.4%, and 38.1%, respectively. All control variables are not significant.



Note: *** $p<0.001$, ** $p<0.01$, * $p<0.05$, n.s. means non-significant

Figure 2. Results of Structural Model

6 Discussion and Implications

In this study, we found that two types of commitment are both significant predictors for the mass gamers’ intention to participate in amateur esports competitions. Furthermore, drawn on the U&G theory, we also identified three everyday gaming behaviors which have significant impacts on mass gamers’ commitment building and hence on their decision-making of amateur esports participation. These findings offer implications from the theoretical perspective and practical perspectives.

Theoretically speaking, this research enriches the knowledge of individual decision-making of amateur esports participation, contributing to our understanding of the transformation of mass gamers to amateur esports participants. This paper confirmed that commitment is an important factor influencing mass gamers’ intention to participate in amateur esports competitions. The further classification of commitment, namely autonomous and controlled commitments, provides us with more detailed information. That is, controlled commitment ($B=0.526, p<0.001$) takes a more impactful role in the

amateur esports competition participation intention compared with the autonomous commitment ($B=0.163, p<0.01$). These findings imply that gamers with higher controlled commitment are more likely to perform the game consumption in the esports scenes, such as attending amateur esports competitions. Prior findings consistently identify that autonomous commitment and controlled commitment usually related to the satisfaction/trust to the IS (e.g., Hashim and Tan, 2015; Jin et al., 2010) and/or the continuance to the current IS use pattern (e.g., Sun et al., 2017; Xiao et al., 2020). Compared with these studies, current research discovers the positive role of these two commitments in a typical extended IS use in a video gaming context, namely esports consumption (say, participating in amateur esports competitions). This also implies a future research path for the IS research on esports, namely understanding roles variance of commitments or other factors in casual gaming (everyday gaming) versus professionalized gaming (say, amateur esports engagement).

Moreover, this study further clarified the influences of specific everyday gaming behaviors on mass gamers' different commitments building. We found that three dimensions of everyday gaming behaviors, namely hedonic play, social play, and professionalized play, facilitate the development of autonomous commitment to the esports video game engagement. Furthermore, the most significant everyday gaming behavior is hedonic play ($B=0.384, p<0.001$) regarding autonomous commitment building. However, hedonic play displays a significant negative impact on controlled commitment development. Social play and professionalized play have a significant positive impact on the development of controlled commitment. Moreover, professionalized play ($B=0.578, p<0.001$) is the most influential gaming behavior with respect to the controlled commitment development. Compared with the previous IS research on esports and mass gamers, such as watching esports (e.g., Jang and Byon, 2019; Macey and Hamari, 2018) and esports gambling (e.g., Brooks and Clark, 2019; Macey et al., 2021), this study established an additional link between mass gamers and esports engagement. Furthermore, this study also provides initial implications for the field. For example, our findings indicate that for mass gamers who usually play the esports video game with hedonic purposes (i.e., hedonic play), their intention to participate in amateur esports competitions may be more explained by the autonomous commitment to the esports video game engagement because of their love to this game. Besides, mass gamers who usually play the esports video game with the professionalized purpose (i.e., professionalized play), their intention to participate in amateur esports competitions may be more explained by the controlled commitment due to their efforts and resources invested in the game engagement. These research implications also hint at research ideas for IS researchers to consider multiple factors beyond the hedonism for explaining the mass gamers' decision-making in scenarios related to amateur esports. From a practitioner's point of view, besides the hedonic elements, esports game designers should consider the relevant game mechanics and dynamics to encourage individuals to perform the social play and professionalized play that are, as supported by this study, also beneficial to amateur esports engagement. As for the curators of amateur esports competitions, this study helps them segment the gamers based on their commitment to esports. The findings of this study imply that highly committed gamers (especially gamers with high controlled commitment) should be the targeted group for amateur esports participant recruitment.

7 Limitations

This study has several limitations that offer future research opportunities for further improvements. Firstly, the generalizability of the findings is limited, which constrains the external validity of the findings. Because current research findings are merely based on data from one specific research object and mass gamer group, namely mass gamers of League of Legends in China, findings' generalizability needs more diverse objects and/or mass gamers groups to support in the future research endeavors. Furthermore, the current study is cross-sectional. This cross-sectional design fails to display the "true" causal effect of everyday gaming behaviors and amateur esports participation. The additional study design (e.g., experiment and/or longitudinal design) is supposed to be adopted in future research to overcome this limitation and further examine and expand the findings of this study. Besides, the data collection relies on the self-report response, which incurs the concerns of the self-report bias. Thus, data

collected from various sources (say, objective data or second-hand data) are encouraged in the further investigation to triangulate the findings obtained from the self-report data collected in the current study.

8 Conclusion

This study focuses on amateur esports development. To achieve the success of amateur esports and facilitate esports sustainability, this research aims to understand the transformation of mass gamers into amateur esports competition participants. This study contributes to research and practice knowledge regarding amateur esports development. In addition, this study also enriches the research foci of esports by inserting the amateur level between casual gaming and professional esports, which profoundly facilitates the development of the whole esports industry. We believe that our research can expand the scholarly and practical understandings of casual gaming, amateur esports, and professional esports.

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