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Using an Extended Technology Acceptance Model for Online Strategic Video Games:
A Case of Multiplayer Online Battle Arena (MOBA)

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ABSTRACT

Due to the rising popularity of online strategic video games, it is crucial to examine the acceptance structure of these games. This study attempts to perform an acceptance evaluation of online strategic video games, particularly multiplayer online battle arena (MOBA), using an extended technology acceptance model (TAM) developed in the current literature and establish a predictive value in determining the behavioral intention in playing online strategic video games. To carry out this objective, a case study consisting of 439 undergraduate students as a sample was conducted. After the data filtering process which involves the removal of insincere responses and non-engaging responses and of those who have not played MOBA games, 278 research participants became the final sample. The questionnaire was created and underwent reliability analysis. Cronbach's alpha coefficient was computed to show the relatedness of each factor as well as to determine its validity and internal reliability. Nine factors were considered in this work that tested for significant relationships and predictive capabilities using structural equation modeling with AMOS software. These factors include altruism, social interaction, use context, perceived ease of enjoyment, perceived ease of use, perceived usefulness, attitude, flow, and behavior intention. Results show that the significant determinants of user behavior intention are the flow, attitude, and perceived ease of use while the perceived enjoyment, social interaction significantly influence attitudes in playing online strategic video games, use context, and flow. Furthermore, this work also demonstrates that altruism, social interaction, use context, perceived enjoyment, flow, and attitude are significant factors that can be added to extend TAM. These findings would serve as guidelines in the formulation of principles for game design and development.

KEYWORDS

Behavior Intention, Multiplayer Online Battle Arena (MOBA), Online Strategic Video Games, Technology Acceptance Model (TAM)

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1. INTRODUCTION

The rapid availability of the internet leads to the presence of a variety of online video games that attracted players worldwide. Recently, games that are interactive has achieved significant development in the area of game development. Video game players come from various ages, nationality, and occupation. The Entertainment Software Association (2017) found out that video game players are women, comprising 35% to 40% of the population and more than 72% of households play video games. A myriad of motivations exists why they play online video games (Mathews, 2017). These include the following:(1) players are connected to their inner child; (2) players have an outlet to escape from different stress in life; (3) players develop their creativity, strategic skills, and imagination; (4) players can gain friends by playing games; (5) players develop their eye, and hand coordination; and (6) players have something to look forward to. Yee (2006) examined these different motivations. While Granic et al. (2014) comprehensively outlined the benefits of playing video games, playing video games can lead to addiction (Kuss and Griffiths, 2012). This phenomenon is widely documented and reported in the current literature (Anderson and Dill, 2000; Ng and Wiemer-Hastings, 2005; Lemmens et al., 2009; Young, 2009; Kuss and Griffiths, 2012; Wittek et al., 2016; Bean et al., 2017) and will not be discussed here for brevity. Despite its ill-effects, recent works have demonstrated its benefits including cognitive, motivational, emotional, and social ones (Granic et al., 2014), improved working memory (Colzato et al., 2013), disaster learning (Gampell et al., 2017), and probabilistic learning (Schenk et al., 2017), among several others. This list is not intended to be comprehensive. This work aims not to contribute in this debate, but instead, it provides an evaluation of the acceptability of these video games to leverage on their benefits.

One of the most popular strategy video games is the multiplayer online battle arena (MOBA), it is also known as action real-time strategy (ARTS). It is a sub-genre of strategic video games in which player identify his/her character in a team to fight with the other team. The primary objective is to destroy the opposing team with the help of the skills of the chosen character. MOBA has attracted people who desire to put together quick strategies and have a good deal of time for the game. Given the popularity of these MOBA games, it is of full interest to determine an in-depth evaluation of its broad acceptance in the games industry. Lin and Lu (2011), proposed a model that explained the use of social networking sites in incorporating external factors and motivation theory. In the domain of information and communications technology (ICT), scholars are interested in determining the rigorous motivations of acceptance behind the actual usage of information systems. These are some of the models that can be used in explaining such usage: theory of reason action (Ajzen, 1975), motivational model (Davis et al, 1992), model of personal computer utilization (Thompson et al., 1991), unified theory of acceptance and use of technology (Venkatesh et al., 2003), theory of planned behavior (Ajzen, 1991) and technology acceptance model (Davis, 1989).

The technology acceptance model (TAM) (Davis, 1989) is one of the leading techniques used to analyze the behavioral patterns. TAM has been used in the past decade and has proven its validity in predicting the behavioral usage of various information systems. In the past, multiple works have successfully applied TAM and extended TAM models which would explain the user acceptance in many computer application systems (Lin and Lu, 2000; Moon and Kim, 2001; Koufaris, 2002). An extended TAM was suggested by Shin and Shin (2011) that examined the acceptance factors of people in playing social network games. Hsu and Lu (2004) also made use of an extended TAM. Lee and Tsai (2010) investigated people why they continue playing online games using extended TAM. Kwon and Wen (2010) extended the TAM by adding social, identity, altruism, and telepresence. Kim et al. (2011) examined cultural difference as motivation in using different social networking sites. Rosen and Sherman (2006) discussed the acceptance of people's intention to use social networks by extending the TAM. Shin et al. (2011) proposed an extended TAM to investigate factors influencing how user accept the social games. On the other hand, Liang and Yeh (2011) studied the effect of