



# Perceived control and gender difference on the relationship between trialability and intent to play new online games



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## ARTICLE INFO

### Article history:

Available online 16 October 2013

### Keywords:

Massively multiplayer online gaming  
Trialability  
Perceived control  
Behavioral intention  
Gender difference

## ABSTRACT

With the growing number of online game players and the increasing of new online games development, it is imperative for marketers to develop a better understanding of players' new game adoption decisions. This study examines perceived control as a mediator of trialability-product adoption relationship, and gender difference as a moderator of the relationship between trialability-product adoptions. A field survey was conducted to test the hypotheses of the study. Respondents were graduate students from Taiwan universities. A total of 411 undergraduate students with massively multiplayer online gaming (MMOGs) experience participated in this study. The structural equation model (SEM) method was employed to analyze the data. The findings indicate that perceived product trialability has a direct influence on intent to play new games, and indirect effects through perceived process control. Gender differences also moderate the trialability effects on the adoption of new online games. Perceived trialability had more of an effect on intention to play new online games for female players than for male players. To develop an effective product development and communication strategy, the finding suggests that online game firms should focus on new product characteristics and consider consumer gender differences.

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## 1. Introduction

Internet provides conveniences that help to fuel growing interest in playing online games. Internet has, therefore, led to radical changes in consumer buying habits (Martín & Jiménez, 2011). The online game market is estimated to have higher annual rates of growth (Koo, 2009) and the global total sales revenue should reach US\$20 billion in 2015 (Huang & Hsieh, 2011). The significant growth in the sales revenue of the online game market means it has become increasingly more competitive, and that new competitors and products have entered the market and cut into the market share. The successful launch of new games can promote the growth of a firm's market share, whereas online game companies have difficulty obtaining new players. From a marketing perspective, understanding online game player behavior can contribute to the success of new games in the online game market (Wu & Liu, 2007).

Previous research has documented trialability as one of the most significant variables influencing new product/service adoption (Hsbollah & Idris, 2009). Numerous research findings have confirmed that trialability has a positive effect on the e-commerce of small and medium enterprises (Seyal & Rahman, 2003), Internet banking (Ndubisi & Sinti, 2006), and E-learning

(Hsbollah & Idris, 2009) adoption decisions. However, other findings in the literature contradict previous research results, which have found a negative relationship (Chong & Pervan, 2007; Hernandez & Mazzon, 2007) or a non-significant relationship between perceived trialability and intention (Alam, Khatibi, Ahmad, & Ismail, 2007; Lin, Wang, Kao, & Cheng, 2007; Peter, Ritho, Olweny, & Wanderi, 2012). The mixed results of previous research on the relationship between trialability and adoption decisions and the effects of trialability remain a compelling and unresolved issue. To resolve the issues regarding the role of trialability in developing an effective product development/communication program, it is imperative for market operators to better grasp the cause of trialability effects.

This paper offers up a potential mediator and a potential moderator to help explain the mixed results across various academic studies. In cyberspace, perceived behavioral control is a strong determinant of consumer attitudes and intentions to use a website (Dabholkar & Sheng, 2009). Although research has discussed the role of gender as a moderator toward Internet usage, Internet research has still not fully explored gender as a key variable for market segmentation (Wang, 2010). This paper therefore extends recent trialability research by investigating the effects of perceived behavioral control and gender differences on the relationship between trialability and the intent to play new online games. The study is the first to examine the mediating effect of perceived control and the moderating effect of gender on the relationships

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between trialability and adoption intention for new online games. This study attempts to add new and useful knowledge to help online game firms consider the role of perceived process control and consumer gender differences to facilitate new player adoption.

Of the various types of online games, massively multiplayer online games (MMOGs) are currently the most popular game type in North America and Asia (Chen et al., 2005) and have become multi-billion dollar businesses (Constantiou, Legarth, & Olsen, 2012). This study thus considers MMOGs and explores the role of perceived control and gender difference on the relationship between trialability and new MMOG usage. Because of increased competition in the online gaming market, how to encourage player participation and new game purchase is a key element for business success. Understanding the influential mechanism of the trialability characteristic can therefore provide greater insight into the industry. The following section presents a review of the literature associated with online gaming, followed by the proposed hypotheses of this study. The research methodology is followed by an analysis of the results and conclusion.

## 2. Literature review and hypotheses

Because of the increasing importance of the online game industry in the entertainment sector, factors influencing online game usage examined in previous research include theory of reasoned action (TRA; Wu & Liu, 2007), the technology acceptance model (TAM), theory of planned behavior (TPB; Lee, 2009; Lee & Tsai, 2010), and the diffusion of innovation theory (DOI; Cheng, Kao, & Lin, 2004). The TRA (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) has been recognized as a practical framework for modeling rational human behavior, asserting that a person's personal beliefs are important determinants of his or her subsequent actions (Croasdell, McLeod, & Mark, 2011). The TRA suggests that a person's particular behavioral intention is an important antecedent of behavior performance, and a function of a person's subjective norms and attitude toward the behavior (Wu & Liu, 2007). Ajzen (1985) further suggested that a person's intention is also influenced by behavioral control and added the construct to the TRA, resulting in TPB enabling more accurate predictions of specific behaviors. The added perceived behavioral control is the belief that people control behavioral intention (Tan, Ooi, Sim, & Phusavat, 2012). Perceived behavioral control significantly contributes to intention prediction (Ajzen & Madden, 1986).

The TAM is also an adaptation of the TRA, which postulates two technology-related antecedents (perceived usefulness and perceived ease of use) of attitude toward technology adoption. Whereas perceived usefulness, which relates to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320), is a predictor in a problem-solving technology adoption such as word-processing systems, researchers have found that this was not always true in entertainment technology adoption such as online games (Hsu & Lu, 2004). When perceived ease of use is also defined as the user's perception of the level of ease in using the system (Salhieh, Abu-Doleh, & Hijazi, 2011) and the construct of perceived control is defined as "people's perception of the ease or difficulty of performing the behavior of interest" (Ajzen, 1991, p. 183), it is obvious that perceived ease of use in the TAM is similar to the construct of perceived behavioral control in the TPB.

Finally, DOI theory by Rogers (2003) has documented five perceived characteristics of an innovation: relative advantages, compatibility, complexity, trialability, and observability) that affect the innovation adoption. Trialability refers to the degree to

which an innovation may be pilot tried or tested without high start-up costs by its potential adopters before its actual adoption (Hernandez & Mazzon, 2007; Hsbollah & Idris, 2009). The opportunity to try an innovation with no expectation or requirement for continued use gives potential users an opportunity to see how it works under their own terms and conditions, and helps to decrease uncertainty about the new product (Lewis & Orton, 2000). In this study, perceived trialability refers to the beliefs toward product attributes regarding its degree of ability to undo operations and easily recover from mistakes.

### 2.1. Effect of perceived product trialability on perceived process control of new MMOGs

Perceived control reflects a person's beliefs regarding knowledge access on the attributes and dynamics of a situation, and the ability to influence it according to his or her goals (Klimmt, Hartmann, & Frey, 2007). In this study, perceived control of new MMOGs is defined as consumer perception on the ease of potential situations to play new MMOGs. Whereas computer users experience frustration from system unreliability, recovery-oriented computing (ROC) design practices (e.g., rapid-recovery capabilities and undo functions to reverse mistakes) do much to solve this complication (Fox & Patterson, 2003). A previous study suggested that the ability to recover from failure and undoing allows the user to progress with the confidence to recover from it (Teitelman, 1984). The use of "undo" commands that reverses the unintended effects of commands reduces the risks associated with learning a new system (Bagozzi, Davis, & Warshaw, 1992), and are therefore an important prerequisite for convenient user interfaces (Wolf et al., 2005). Whereas new use behavior is relatively problematic regarding control (Kokkinaki, 1999), allowing potential users to easily recover from mistakes could minimize their fears of being out of control. Thus, trialability attributes may cause users to feel in control in a new and possibly unfamiliar situation. Therefore, the author proposed the following hypothesis:

**H1.** Perceived product trialability positively influences perceived process control of new MMOGs.

### 2.2. Effect of perceived product trialability on intent to play new MMOGs

Innovation trialability is often assumed to influence a person's willingness to adopt a new technology (Conrad, 2010; Gallagher & Wang, 2002). The trialability of an innovation allows potential adopters to reduce uncertainty and gain confidence (Cheng, Blankson, Sutikno, & Wang, 2009), which allows them to feel comfortable with the innovation adoption and be more committed to a final adoption. Research suggests that a highly usable system is characterized by the ability of users to easily navigate and quickly recover from mistakes (Roslin & Weisband, 2002). Whereas the usage outcomes of a new type of online game are not yet evident, new users who are able to quickly recover from mistakes could minimize these uncertain outcomes (Bagozzi et al., 1992). The interface of a computer-based system should allow the user to recover from mistakes and reduce the amount of learning necessary to interact successfully with the system (Trauth & Cole, 1992), resulting in a willingness to use the system. Thus, the author proposed the following hypothesis:

**H2.** Perceived product trialability positively influences the intent to play new MMOGs.

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