

WHAT DRIVES PEOPLE TO PLAY WII GAME?

The Trend of Human-Computer Interaction on Video Game Design

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Keywords: Human-Computer Interaction, Wii, Leisure Technology, Structural Equation Model.

Abstract: Nintendo released the fifth home videogame console, Wii in November 2006, and sold over six million units in six months. What drives people to play Wii game? What is the magic? The TAM model has empirically tested why people accept some technologies, but most constructs are measured for workspace contexts. This research argues that if we want to understand that why people are attracted to the leisure technology, such as Wii, should take consider the leisure social psychology constructs. We consider that people playing the leisure technology will experience a subjective psychological state of leisure, not only objectively tangible activities. Thus, the intrinsic motivations of leisure will influence the attitudes and intentions of people for using the Wii Game. This research proposes a new leisure technology acceptance model, then using questionnaires, streets surveys, and SEM to collect and verify data. This study provides a new perspective and direction to study leisure technology and human-computer interaction (HCI).

1 INTRODUCTION

The Japanese company--Nintendo released the fifth home videogame console, Wii in November 2006, and sold over six million units in six months according to the MIC market research (Hsu, 2007). In Taiwan, before the official sales of the Wii Game, parallel imports have already taken the market by storm. What drives people to play Wii Game? What is the magic?

In IS research, technology acceptance model (TAM) has been popularly used to explain why individuals accept various types of technologies, and has got wide empirical supports (Hsu & Lu, 2004; Pagani, 2006; Wu et al., 2007). But TAM has generally been applied to technology in the workplace (Legris et al., 2003), is it still properly used to support the Wii videogame, the entertainment technology, the leisure technology (Bryce, 2001)?

Past studies on the participation in leisure activities emphasize on the individual psychological

intrinsic motivation, perceived control, and perceived freedom, which influence the participation in leisure activities (Iso-Ahoa, 1980; Roger & Kleiber, 1999). This study argues that understanding people in leisure activities should consider their leisure psychology.

Therefore, this study constructs the leisure technology acceptance model that combined integrated model of TAM (Venkatesh et al., 2003) and intrinsic motives of leisure to verify what drives people to play Wii game. This research adopts different sources of data, including questionnaires and street surveys, in order to obtain the perceptions and usage attitudes of the Wii Game. Then, Structural Equation Modelling (SEM) is used to analyze data and validate the model. This model provides a new perspective and direction to study leisure technology and human-computer interaction or design.

2 THEORETICAL BACKGROUND

2.1 Leisure, Technology and Subjective State of Leisure

Leisure has been defined as a special type of activity, a time for shirking responsibilities; it is an experience of satisfaction, happiness, excitement, and sense of belonging, or a combination of activity, time, and experience (Roger & Kleiber, 1999). Leisure activities are not only the objective actions involved in the activities, but also a subjective psychological state arrived at by conducting the activity (Azjen & Drive, 1992; Coleman & Iso-Ahola, 1993; Iso-Ahola, 1980).

Technology has been a leisure activity for a long time; from the traditional movies, television, videogames to the Internet 'browsing', all of which have become parts of human leisure activities. Technology substitutes traditional leisure activities and people can enjoy relaxation, enjoyment, escape from reality, social interaction, and development of self-orientation derived from traditional leisure activities (Bryce, 2001).

Thus, those who engage in leisure technology also experience a subjective psychological state of leisure. This study argues that people enjoyed in leisure technology are not only objectively tangible activities, but the achievement of subjective state of leisure through technology.

2.2 Leisure Intrinsic Motivations

Coleman & Iso-Ahola (1993) considers that participation in leisure is due to coping with stress in order to maintain physical and psychological health. In studying attitudes towards video games, Barnett et al. (1997) demonstrates that there are psychological motivations involving escape, fun, and avoidance of boredom. Leisure also is a socialization process for individuals to obtain leisure knowledge, attitudes, values, techniques, and motives (Iso-Ahola, 1980). Coleman & Iso-Ahola (1993) argues that social support is an important reason for participating in leisure activities.

Another intrinsic motivation of leisure arises from the motivation for self-growth; leisure provides people with opportunities to clearly understand one's own strengths and weaknesses, to continuously develop abilities, and become the type of person one expects to be (Mannell & Kleiber, 1997). Barnett et al. (1997) also indicates that videogames involve the intrinsic motivation of self-

achievement. In summary, this study considers that the leisure intrinsic motivations will influence the attitude of people in the leisure activities. This study argues the leisure intrinsic motivations also the drivers of playing the leisure technology, Wii Game.

2.3 Flow Experience

Flow experience was first proposed by Csikzentmihalyi (1975), and was used to describe the psychological state that people are immersed in an optimal leisure activity. There are many empirical evidences show a positive influence of flow experience on technology acceptance (Hsu & Lu 2004; Koufaris, 2002). Therefore, this study considers that as a type of leisure technology, the Wii Game is likely to achieve the leisure psychological state of flow experience.

2.4 Leisure Constraint and Social Norms

Leisure constraints refer to the inability or decreased engagement in leisure due to limitations in physical entity, environment, or society (Mannell & Kleiber, 1997; Hoff & Ellis, 1992). In a study on online games, Hsu & Lu (2004) also finds that social norms are significant factors that impact the people to accept online games. Crawford et al. (1991) summarize to three types of leisure constraints: personal limitations, interpersonal limitations, and structural limitations. This study will focus on interpersonal leisure constraints on playing the Wii game.

2.5 TAM Model

The TAM model was proposed by Davis (1989) as an improvement of the Theory of Reasoned Action (TRA), and primarily evaluates how the perception of organizational personnel regarding the technology's ease of use and perceived usefulness influence their behavioural intention to use, which in turn affects usage. The TAM model has generally been applied to technology used in the workplace (Legris et al., 2003), and the concept of perceived usefulness of technology is derived from extrinsic motivation such as work performance stress (Davis, 1989; Jackson et al., 1997; Venkatesh et al., 2003), and acceptance of technology, especially in non-workplace usage, which may arise from voluntary intrinsic motivation of those who accept. Some scholars have also noticed the influence of intrinsic motivation on technology acceptance model, and

introduce intrinsic motivation in the technology acceptance model (Chung & Tan, 2004; Davis et al., 1992; Venkatesh et al., 2003). Thus, this study considers the above leisure intrinsic motivations should include in the leisure technology TAM model.

Perceived ease of use also has a positive influence on perceived usefulness (Venkatesh et al., 2003). For example, the Wii Game uses its wireless controls to simulate the motion of sports and games, so that users feel ease of use, and they in turn feel that playing the game is useful. Perceived ease of use also makes it easier for users to reach flow experience (Hsu & Lu, 2004). In fact, many users of the Wii Game overlook the pain caused by excessive exercise due to their immersion in it.

3 METHODOLOGY

3.1 Conceptual Model

According to the above literature and theories, this study builds a leisure technology TAM conceptual model. The model considers that the intrinsic motivation of leisure technology will affect the attitudes and intentions of people when using the Wii Game. Leisure constraints of social norms have a negative influence on the attitudes and intentions of people when using leisure technology. Perceived usefulness and ease of use still affects the attitudes and behavioural intentions of people toward leisure technology (See Figure 1). Next, we forms H1~H10 hypotheses prepared to verify the constructs' correlations.

3.2 Measurement

The questionnaire was developed from literature relating to TAM and leisure social psychology. After completion of the draft of the questionnaire, experts and scholars were asked to provide their opinions on the content validation. Original literature was consulted for backtranslate comparisons to confirm to original intentions of the authors. Prior to release of the official questionnaire, 25 Wii Game users were found for a pilot test, and the content was fine tuned to make the intentions of the question clear in order to create face validity and content validity. The constructs and measurements are shown in Table 1.

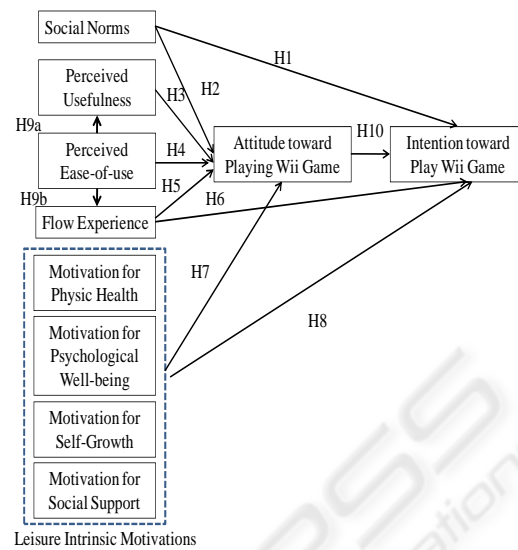


Figure 1: The Leisure Technology TAM Model.

Table 1: Constructs and Measurements.

Constructs	Literature
Leisure Intrinsic Motivations	Coleman & Iso-Ahola (1993); Barnett et al. (1997); Manfredro & Driver (1996); Mannell & Kleiber (1997)
Leisure Constraints from Social Norms	Crawford et al. (1991); Hoff & Ellis (1992); Hsu & Lu (2004); Koufaris (2002) Mannell & Kleiber (1997)
Perceived Usefulness, Perceived Easy of Use	Hsu & Lu (2004); Venkatesh et al. (2003)
Attitude to Use Intention to Use	Davis et al. (1992); Hsu & Lu (2004); Venkatesh et al. (2003)

3.3 Tests of the Structural Model

The structural model of this study is based on traditional TAM, and has added the aspects of leisure, social norms, and flow experience (Hsu & Lu, 2004) to conduct an extension of TAM testing. The structural model of this study is analyzed by the AMOS software of SPSS. First, the traditional information technology acceptance model was tested, followed by the modified information technology acceptance model (Extended TAM); this is the traditional TAM with the addition of aspects of social norms, psychological relaxation motivation, physical health motivation, self-growth motivation, social support motivations, flow experience, in order to determine the final model.

4 CONCLUSIONS

This study combines the leisure social psychology into the extended TAM and explains why the leisure technology so popular? What are the drivers of the Wii game? Past literature, such as Hsu & Lu (2004) have considered the different constructs, social norms and flow experience in the traditional TAM to explain intentions in playing online games. This study further proposes that TAM should include the leisure intrinsic motivations to study the leisure technology, such as Wii, PS3, online games, etc. Bryce (2001) argues that technology reshapes and transforms the leisure activities. If we can not change our perspective of technology from workspace to leisure contexts, how can we find out or design the useful, easy of use technology for leisure activities? This study provides a new direction to leisure and IS research.

In the future study, the researchers plan to collect data from internet questionnaires on the my3q web page in order to enhance the breadth of samples. This study will also use convenience sampling, with questionnaires filled out by relatives and friends, as well as questionnaire distribution on the streets of Taipei.

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