The roles of intrinsic motivators and extrinsic motivators in promoting e-learning in the workplace: A case from South Korea

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ABSTRACT

Acceptance of e-learning by employees is critical to the successful implementation of e-learning in the workplace. To explain why employees might accept the e-learning technology, motivational factors must be considered. Although the Unified Theory of Acceptance and Use of Technology (UTAUT) has identified many variables to understand employees' motivation to use e-learning, current literature cannot conclude the roles of extrinsic and intrinsic motivators in the technology adoption process. Consequently, organizations often overestimate the effects of extrinsic motivators in promoting e-learning while ignoring employees' intrinsic motivation. To examine the effect difference between the two motivational factors, this study surveyed 261 employees in a food service company in South Korea with the UTAUT instrument. Upon analyzing 226 valid cases with LISREL, the findings revealed that intrinsic motivators (effort expectancy, attitudes, and anxiety) affected employees' intention to use e-learning in the workplace more strongly than did the extrinsic motivators (performance expectancy, social influence, and facilitating conditions). Furthermore, the effects of intrinsic motivators mediated the effect of extrinsic motivators. Implications of this study are important for both researchers and practitioners.

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1. Introduction

Technology is a viable tool to make it possible to create, save, and share information for future use in the workplace. Nowadays, organizations cannot survive and grow without significant support from technology (Rosenberg, 2006). According to the American Society of Training and Development (ASTD), the portion of technology-based training in the workplace approached 36.5% of employee training in 2009, which is the largest volume since the ASTD began to collect data in 1996 and the upward trajectory is strong (ASTD, 2010). The collective use of technology-based training across organizations has been identified as "e-learning", which can be designed, developed, and delivered via computer- and Internet-based applications (Clark & Mayer, 2008; Horton, 2006).

The continuous development of information and communication technology has enabled e-learning to become a new form of employee's training in the workplace (Rosenberg, 2006). E-learning provides employees with a different opportunity to learn regardless of where they are and when they are available. In e-learning employees are able to participate in self-faced and interactive

learning that is otherwise impossible. The learner-centered approach further makes e-learning a powerful training tool for employees as well as one that influences them to change their learning behaviors within their work environments (Bandura, 2002). Such changes in the training contexts of organizations have highlighted the need for understanding and incorporating employee's acceptance on e-learning in order to facilitate the e-learning implementation processes.

Researchers began to identify factors that influence individuals' acceptance on information technology since the beginning of the personal computer era (e.g., Davis, 1989). The consensus is that intrinsic and extrinsic motivations are two critical factors to encourage employees to adopt information technology (Davis, Bagozzi, & Warshaw, 1992; Venkatesh, 1999). Intrinsic motivation reflects the natural human propensity to learn and assimilate. Extrinsic motivation, on the other hand, varies considerably in its characteristics and thus can either reflect external control or influence self-regulation (Bandura, 2002). Considering the complexity involved in understanding how employees might adopt new information technology, Venkatesh, Morris, Davis, and Davis (2003) proposed the Unified Theory of Acceptance and Use of Technology (UTAUT) to expand the explanation on technology acceptance with multiple social, psychological, and technical constructs.

The UTAUT presents a robust conceptual framework to explain the relationship between the aforementioned constructs and user's intention to adopt information technology (Pynoo et al., 2011;

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Shin, Shin, Choo, & Beom, 2011; Venkatesh et al., 2003). Current research, however, is lacking in three areas. First, little research using UTAUT were conducted on e-learning implementations in the workplace. Most studies were conducted among students or instructors in academic settings (Featherman & Pavlou, 2003; Pynoo et al., 2011; Shin et al., 2011; Szajna, 1996). Second, it is unclear whether or not intrinsic motivators and extrinsic motivators might influence employees' e-learning acceptance levels differently. Although a few studies have attempted to investigate their effect difference in promoting technology acceptance, the results remain inconclusive (Atkinson & Kidd, 1997; Venkatesh, Speier, & Morris, 2002). Third, a recent study in users' acceptance towards technology revealed that the predictability of UTAUT might vary when applied in different cultural settings (King & He, 2006). Although UTAUT's validity and theoretical robustness have acquired strong empirical support, most studies have mainly been carried out in the US context. The applicability of UTAUT in different cultural settings needs further investigation. To address these deficiencies, the present study examined two separate categories of motivators—intrinsic and extrinsic—and their effects on employees' intentions in adopting e-learning in the workplace. Furthermore, the study was situated in the South Korean context, to investigate UTAUT's feasibility in a different cultural context. The research questions are the following:

Research Question 1: To what extent does intrinsic motivation influence employees' intention to use e-learning in the workplace of South Korea?

Research Question 2: To what extent does extrinsic motivation have a direct and independent impact on behavioral intention to use e-learning in the workplace of South Korea?

Research Question 3: To what extent does the effect of extrinsic motivation differ from the effect of intrinsic motivation in influencing the use e-learning in the workplace of South Korea?

2. Literature review

2.1. E-Learning the workplace of South Korea

E-learning has been defined in various ways by many researchers. Kelly and Bauer (2004) view e-learning as a web-based learning tool that utilizes web-based communication, collaboration, knowledge transfer and training to benefit the individuals and organizations. Other scholars (Engelbrecht, 2005; Khan, 2001) see e-learning as the delivery of teaching materials via electronic media, such as Internet, intranets, extranets, satellite broadcasting, audio/video tape, interactive TV, and CD-ROM. Rosenberg (2001) defined e-learning as "the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance" (p. 28). Rosenberg (2001) also expanded the scope of e-learning from specific course to learning architecture that included knowledge management, which supports organizational performance, not just learning. Many practitioners have recognized e-learning as online courseware or e-training that has replaced the traditional classroom training (Rosenberg, 2006).

With regard to the application of e-learning in organizations, nearly 85 % of Fortune 500 companies utilize e-learning for developing their employees' knowledge and skills (Barron, 2003). Organizations invested over 250 billion dollars for training, of which 16 billion dollars were spent on e-learning training (Johnson, Hornik, & Salas, 2008). Additionally, the e-learning portion of employee training shows drastic growth from 15.4% in 2002, and 36.5 % in 2009 (ASTD, 2010). While the rapid growth of e-learning has been demonstrated in the US, South Korea has also been following the e-learning growth trend.

E-learning in South Korea is defined as a stand-alone course, with a self-directed learning format, in which instructors do not exist, and the learning process is controlled by learners (Byun & Lee, 2007; Lee, Yoon, & Lee, 2009). The development of e-learning in South Korea is strongly related to the rapid growth of its information and communications technology industry (Misko, Choi, Hong, & Lee, 2005). High quality e-learning services have been developed because of the nation-wide telecommunications infrastructure and high speed Internet (i.e., South Korea has the fastest average Internet connection speed and the highest rate of broadband connectivity in the world) (Akamai Technologies, 2008; Communications Workers of America, 2009). The rapid growth of e-learning in South Korea began in 1999 due to the support from the South Korean Ministry of Labor (Lee et al., 2009; Lim, 2007). The numbers of companies and employees who have participated in e-learning courses in the workplace have rapidly increased since the end of 20th century. In 1999, the number of employees who participated in e-learning was only 19,653, but the total number of participants in 2005 was more than one million, a 54% increase in 6 years. Moreover, e-learning training comprised over 45% of total training in 2005 (Byun & Lee, 2007; Lee, Byun, Kwon, & Kwak, 2008), which has clearly become a universal training method for the workplace in South Korea (Lee et al., 2008). While this top-down approach might boast the adoption of e-learning in South Korean workplaces, the understanding on how employees have accepted e-learning in their training routines remains illusive. The next section discusses UTAUT as a viable measure to gauge employees' technology acceptance levels.

2.2. The Unified Theory of Acceptance and Use of Technology (UTAUT)

In order to better explain the relationships between employees' technology acceptance level toward information technology and their intention to use the information technology, Venkatesh et al. (2003) proposed the Unified Theory for the Acceptance and Use of Technology (UTAUT) by synthesizing the Theory of Reasoned Actions (TRA) (Fishbein & Ajzen, 1975), the Technology Acceptance Model (TAM) (Davis, 1989), TAM 2 (Venkatesh & Davis, 2000), the Motivational Model (MM) (Davis et al., 1992), the Theory of Planned Behavior (TPB) (Ajzen, 1991), the Combined Model of TAM and TBP (C-TAM-TPB), the Model of PC Utilization (MPCU) (Thompson, Higgins, & Howell, 1991), the Social Cognitive Theory (SCT) (Compeau & Higgins, 1995), and finally the Innovation Diffusion Theory (IDT) (Moore & Benbasat, 1991).

The TRA first explains the drive of human actions with two constructs: attitudes toward target behaviors and attitudes toward subjective norm. The causal relationship between attitudes and actions suggested by TRA is rather strong. The TAM expanded the factor pool of technology acceptance by adding the perceived usefulness of the technology and perceived ease of use to the discussion. TAM2 addresses the technology acceptance in mandatory settings by refocusing on the effects of subjective norms (or social influences). The Motivational Model distinguishes effects of extrinsic and intrinsic motivation in influencing the level of technology acceptance. The TPB, based on the viewpoint of TRA, includes the perceived behavioral control to explain the relationship between attitudes and behaviors. While the C-TAM-TPB model combines constructs of TAM and TPB, the MPCU focuses on external factors that might influence the acceptance level such as job fit and resources available for using the technology. Finally, the SCT integrates factors such as self-efficacy and anxiety into the model to understand the barriers and enablers of technology acceptance.

As a result, UTAUT identifies performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) as four core constructs to predict users' behavioral intentions (BI) and actual user behaviors (UB) in adopting information