Assessing the effects of self-efficacy and competence on individual satisfaction with computer use: an IT student perspective

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Abstract

To explore the determinants of the success of applying computing technology to computer-related work, this study proposed a theoretical model that adopts individual satisfaction as a surrogate for the success of computer learning. Based on social cognitive theory (SCT) and competence-related literature, this study considered self-efficacy, computer competence, and near-term and long-term consequences as the determinants of individual satisfaction with computer use. The research model was tested using a questionnaire survey of 367 IT-related senior undergraduate students in five colleges. The empirical results identified self-efficacy as a strong and positive antecedent of competence, and confirmed the positive effects of self-efficacy on perceived consequences. Additionally, computer competence was found to affect individual satisfaction with computer use directly and indirectly. Moreover, perceived consequences influenced individual satisfaction more than did competence. Overall, this study provided empirical results involved theoretical explanations for understanding the effects of self-efficacy and competence on computer learning behavior. The limitations of the present study were discussed for researchers and practitioners.
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Keywords: Computing technology; Social cognitive theory; Self-efficacy; Competence

1. Introduction

In the current competitive business environment, many organizations are becoming increasingly concerned with improving employee productivity. Computers are one of

the most popular methods of achieving this goal. As noted by Foster and Flynn (1984), computing technology has revolutionized organizational communication, task structure and performance. To sustain competitive advantage, organizations must adjust their structures and redesign tasks to exploit computing technology, specifically by developing and implementing information systems (IS) to improve individual productivity and organizational performance. For instance, adopting a strategic IS can help top management to identify and evaluate competitive strategy towards competitors (Rackoff, Wiseman, & Ullrich, 1985). IS can assist managers in working more productively, including planning, analysis, evaluation, design, and so on (Brancheau & Wetherbe, 1987). The impact of computing technology on computer use is increasingly in small and large organizations (Boynton, Zmud, & Jacobs, 1994; DeLone, 1988), and also influences learning methods in management education (Leidner & Jarvenpaa, 1995). Overall, the ability of using computing technology may determine the success of IS development and computer learning.

During system development, the knowledge and skills of computing technology are the strongest determinants of IS success (White & Leifer, 1986). Thus, the computer competence of system developers may determine whether their work is achieved effectively. From the perspective of system development, individual performance or user satisfaction can be used to predict IS success. In practice, computer competence may guide the career decisions of information technology (IT) professionals (Schein, 1987). Recently, the association between the competence and competitive career advantages of IT professionals has become an important issue (Denning, 2002). However, little work has been done on how computer competence affects the success of computer learning.

In practice, most IT professionals have acquired basic computer competence via formal education during the past several decades, especially at college or university. As noted by Evans and Simkin (1989), student computer proficiency may affect the development and performance of computer–human organizational systems in the workplace. Thus, it is reasonable to assess the computer competence of college students and used this to predict individual satisfaction with computer use and future job performance. From previous studies by many researchers (Bassellier, Reich, & Benbasat, 2001; Geissler & Horridge, 1993; Marcolin, Compeau, Munro, & Huff, 2000; Munro, Huff, Marcolin, & Compeau, 1997; Sambamurthy & Zmud, 1994), understanding and developing a multidimensional instrument to assess the computer competence of IT users is an important issue in related research. Assessing the antecedents and consequences of computer competence is another one. Exploring the above issues by assessing IT students regarding the learning of computing technology, this study attempts to provide helpful suggestions for businesses and colleges engaged in IS development and computer education, respectively.

2. Research model

In early MIS research (DeLone & McLean, 1992; Montazemi, 1988; Raymond, 1985), user satisfaction is a representative and well-established surrogate for IS success. Similarly, individual satisfaction can be used to measure success in using computing technology for IS development. When students are confident in their learning and computing technology abilities, they may form expected outcomes and improve their competence in computer utilization. Moreover, students with better computer knowledge and skills may have better outcome expectations regarding current and future work prospects, as well as higher satisfaction with the learning of computing technology. Based on social cognitive theory