

Delineating the effects of general and system-specific computer self-efficacy beliefs on IS acceptance

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Abstract

This paper discusses extensions to previous research on computer self-efficacy (CSE) and systems acceptance by examining the impact of multilevel CSE on IS acceptance. Based on the technology acceptance model (TAM), we examined the effects of general and system-specific CSE on perceived ease of use, perceived usefulness, and behavioral intention to use a system. The results of a field experiment indicated that system-specific CSE represented a stronger predictor of perceived usefulness and behavioral intention than general CSE. In contrast, general CSE had a stronger effect on perceived ease of use. The research and practical implications of these findings are discussed.

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1. Introduction

The positive effects of IS on job performance and organizational effectiveness have motivated organizations to increase their investment in IS technologies [25]. However, lack of system acceptance and utilization by intended users has proved to be an obstacle to achieving the benefits of IS. This has been termed the productivity paradox [27] and has underscored the importance of IS acceptance as a precondition for achieving any returns from the investment that organizations make in IS [30]. Accordingly, understanding factors that influence a user's decision to accept or reject a system has become an important issue.

TAM [10,11] is recognized as a simple and robust model for studying systems acceptance and utilization. It has been used in various settings to explain system

acceptance across a wide range of technologies and user groups, e.g. [12,26,38]. TAM models IS acceptance as a function of users' perceptions of usefulness and ease of use of a target system.

Computer self-efficacy (CSE), confidence in one's ability to use computer skills to execute a task, has been found to be a reliable determinant of acceptance intention and usage behavior. For example, high CSE beliefs reduced individual resistance to technological innovation and facilitated IS acceptance [14]. Likewise, CSE demonstrated significant effects on other determinants of systems acceptance such as playfulness and computer anxiety [16] and had a positive effect on intention to use Internet-based applications [31,39]. The effects of CSE on perceptions of ease of use, usefulness, behavioral intention to use a system, and actual system usage have been confirmed across many studies, e.g. [20,22,43].

A review of studies of CSE demonstrated that it was a multilevel construct with general and system-specific components [33]. While general CSE refers to a generalized and system-independent individual trait,

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system-specific CSE pertains to judgments of self-efficacy toward a specific system or software package. Several studies have considered the influence of system-specific CSE on learning performance in computer training [24] and computer task performance [44].

Little is known, however, about the effect of system-specific CSE on acceptance behavior. Furthermore, few studies have utilized CSE as an external factor affecting TAM's key variables and most have focused on CSE as a general, system-independent variable [37]. Therefore, our study drew a distinction between general and system-specific CSE and examined the role of each level of CSE on IS acceptance.

2. Theoretical background

2.1. TAM

TAM achieved widespread acceptance as a model for explaining and predicting IS acceptance. It also provides a basis for understanding the impact of external factors on acceptance behavior. However, studies have generally restricted their focus to the core variables and little attention has been given to the role of external factors [28,32].

2.2. Computer self-efficacy

Self-efficacy was first introduced as a core concept in the social cognitive theory (SCT) [5]. It refers to “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performance.” This clearly indicates that self-efficacy does not refer to assessments of the actual skills that people possess but with evaluations of what people believe they can accomplish. Self-efficacy regulates human behavior by influencing people’s motivation, perseverance, and effort to surmount difficulties and perform successfully [15,42]. Individuals with stronger efficacy beliefs are expected to exert more effort and tend to be more persistent in their efforts.

Since SCT maintains that self-efficacy is a task-specific and dynamic variable that varies across tasks and domains, the concept has been applied to specific tasks, including computer and other IS-related activities [23]. The differentiation between general and system-specific CSE beliefs is important for several reasons. First, general CSE is considered a trait-oriented belief, whereas system-specific CSE is considered a state-oriented belief that is easier to influence or manipulate. Second, this differentiation is more closely aligned with self-efficacy and personal

behavior. Third, system-specific beliefs represent a better representation of an individual’s cognition in a particular context, providing greater explanation and prediction of the target behavior [7]. Finally, it allows assessments of the two constructs to exclude evaluations of cross-domain cognitions or skills that may change the performance of a behavior.

3. Literature review and research hypotheses

3.1. General CSE

General CSE (GCSE) refers to “an individual’s judgment of efficacy across multiple computer domains.” It thus refers to perception of ability to use a computer in general (without regard to a particular computing task, application, or environment).

The relationship between GCSE and IS acceptance has been the subject of much research [36,41] but the influence of GCSE on perceived ease of use, and perceived usefulness has been meager [21,29] and fewer studies have investigated the direct effect of GCSE on IS acceptance and utilization.

Past research reported mixed results on the impact of GCSE on TAM variables; some studies found that GCSE had a significant effect on ease of use [1], but others reported non-significant effects. Results pertaining to the impact of perceived usefulness have followed a similar pattern, with some studies reporting significant positive relationships and other studies reporting non-significant, negative relationships. Finally, based on empirical results, some authors suggested that CSE can be used to predict an individual’s intention to use an IS [17] and ultimate system acceptance. Therefore:

Hypothesis 1. GCSE will have positive effects on perceived ease of use, perceived usefulness, and behavioral intention.

3.2. System-specific CSE

System-specific computer self-efficacy (SCSE) refers to an “individual’s perception of self-efficacy in performing specific computer related tasks within the domain of general computing.” It pertains to judgments of efficacy in performing a defined computing task using a specific computer application. This is consistent with Bandura’s [3,4] suggestion that self-efficacy beliefs can be specified at the task or domain level.

In the IS literature, very few studies have reported attempts to examine the role of SCSE in IS acceptance and, as a result, little is known about this relationship. One study examined the impact of GCSE and two SCSE

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