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Adding contextual specificity to the technology acceptance model

Daniel J. McFarland [a,*], Diane Hamilton [b]

[a] *Management Information Systems, College of Business, Rowan University, 201 Mullica Hill Road, Glassboro, NJ 08028, USA*
[b] *Management Information Systems, College of Business, Rowan University, 201 Mullica Hill Road, Glassboro, NJ 08028, USA*

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Abstract

This paper examines the influence of contextual specificity when describing technology acceptance. Social cognitive theory provides the basis for adding several independent variables (computer anxiety, prior experience, other's use, organizational support, task structure, and system quality) and one intervening variable (computer-efficacy) to the technology acceptance model (TAM). This extended model was tested using a mail survey and the results are tabulated using partial least squares. The results show that system usage is strongly influenced by computer anxiety, prior experience, other's use, organizational support, task structure, system quality, and perceived usefulness. In addition, perceived usefulness is the strongest mediator in determining system usage.

Keywords: Technology acceptance; Self-efficacy; Computer efficacy; System usage; Partial least squares

1. Introduction

Researchers and practitioners alike strive to understand individuals' unwillingness to accept systems that appear to promise substantial benefits. Davis, Bagozzi, and

* Corresponding author. Tel.: +1 856 256 5426; fax: +1 856 256 4439.
E-mail address: mcfarland@rowan.edu (D.J. McFarland).

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Warshaw (1989, p. 587) conclude that, "understanding why people accept or reject computers has proven to be one of the most challenging issues in IS research." This lack of understanding continues despite recent improvements in application usability and ease of use (Hasan, 2003). With employees seemingly accepting and rejecting systems unsystematically, many organizations are failing to achieve the benefits promised to them by software manufacturers.

The technology acceptance model (TAM) is one of the most widely used models for describing IT usage behaviors (Igbaria, Guimaraes, & Davis, 1995). The TAM asserts that IT behaviors are based largely on users' perceptions of a system's ease of use and usefulness. While the model "has been empirically proven to have high validity" (Chau, 1996, p.187), it "only supplies general information on users' opinions about a system" (Mathieson, 1991, p. 173). Similarly, user evaluation measures, such as perceived ease of use and perceived usefulness, encompass many different user meanings and theoretical constructs (Chau, 1996; Moore & Benbasat, 1991; Segars & Grover, 1994). Goodhue (1995, p. 1828) concludes that "there are so many different underlying constructs, it is probably not possible to develop a single general theoretical basis for user evaluations." Cognitive psychologists support arguments opposing the mental averaging of an activity domain. "Combining diverse attributes into a single index creates confusions about what is actually being measured and how much weight is given to particular attributes in the forced summary judgment" (Bandura, 1997, p. 11).

2. Technology acceptance models

Igbaria et al. (1995) conclude that the TAM is one of the simplest, easiest to use, and most powerful computer usage models. Similarly, Chau (1996) described the TAM as one of the most influential of the over 20 computer usage models that Saga and Zmud (1994) reviewed.

The theoretical foundation for the TAM is Fishbein and Ajzen's (1975) theory of reasoned action (TRA). "The TAM adapted the generic TRA model to the particular domain of user acceptance of computer technology, replacing the TRA's attitudinal determinants, derived separately for each behavior, with a set of two variables perceived ease of use (PEOU) and perceived usefulness (PERUSE)" (Igbaria et al., 1995, p. 88). PEOU is defined as "the degree to which a person believes using a particular system would be free of effort" and PERUSE is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). Fig. 1 shows a common operationalization of the TAM (Igbaria et al., 1995). The TAM is also based on "the cost-benefit paradigm from behavioral decision theory" (Davis, 1989, p. 321). In general, the cost-benefit paradigm posits that human behavior is based on a person's cognitive tradeoff between the effort required to perform an action and the consequences of completing the action (Jarvenpaa, 1989). Within MIS, the TAM asserts that a person will use an application if the performance benefits outweigh the effort of using the application (Davis, 1989). Davis (1989) assesses *performance benefits* by measuring a person's anticipated