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Chapter VI

The Technology Acceptance Model: A Meta-Analysis of Empirical Findings

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ABSTRACT

The technology acceptance model proposes that perceived ease of use and perceived usefulness predict the acceptance of information technology. Since its inception, the model has been tested with various applications in tens of studies and has become a most widely applied model of user acceptance and usage. Nevertheless, the reported findings on the model are mixed in terms of statistical significance, direction, and magnitude. In this study, we conducted a meta-analysis based on 26 selected empirical studies in order to synthesize the empirical evidence. The results suggest that both the correlation between usefulness and acceptance and between usefulness and ease of use are somewhat strong. However, the relationship between ease of use and acceptance is weak, and its significance does not pass the fail-safe test.

INTRODUCTION

Information technology (IT) acceptance or adoption has received considerable attention in the last decade. Several theoretical models have been proposed to explain end users' acceptance behavior. Among them, the technology acceptance model (TAM) proposed by Davis (1989) is widely applied and empirically tested. There have been tens of empirical studies conducted on TAM since its inception. Compared with its competing models, TAM is believed to be more parsimonious, predictive, and robust (Venkatesh & Davis, 2000).

Despite the plethora of literature on TAM, the empirical tests so far have produced mixed and inconclusive results that vary considerably in terms of statistical significance, direction, or magnitude. Although they are not uncommon in social sciences where human behavior is difficult and complex to explain, the mixed findings not only undermine the precision of TAM, but also complicate efforts for IT practitioners and academicians to identify the antecedents to user acceptance behavior.

The goal of this study is to understand to what extent the existing body of literature reflects substantial and cumulative validity of TAM. In particular, we synthesize the existing findings on TAM by conducting a meta-analysis. We hope that by integrating existing empirical findings, we can better understand how TAM is applicable to different technologies as a whole. We will be able to examine the relationships between the constructs of TAM with a larger sample of subjects than any individual studies. We hope that the results of this study can be used as a benchmark for future tests of TAM.

Besides its potential theoretical contributions, a meta-analysis on TAM also is significant to IT management practice. By understanding the substantive antecedents to user acceptance, IT managers can take more effective interventions to achieve greater technology acceptance or usage. As Robey and Marus (1998) and Benbasat and Zmud (1999) noted, IT management needs prescriptions. IT researchers should not only apply rigorous methodology best suited to their research objectives, but also produce relevant and consumable research for practitioners. There can be many possible ways for academic research to contribute to practice. Benbasat and Zmud (1999) noted as a successful example, "IT research based on Theory of Reasoned Action and its extensions, such as the Theory of Planned Behavior, to the study of IT adoption, implementation, and use" (p. 9). They suggested that once a sizable body of literature exists regarding a phenomenon, "it does become possible to synthesize this literature" (p. 9). Thus, they recommended that the "IS research community produce cumulative, theory-based, context-rich bodies of research" (p. 9). In a sense, the current study answers this rigor and relevance research call.

The outline of this chapter is as follows. We first review the literature on TAM and indicate major inconsistencies and discrepancies in the existing findings. Then, we describe how we collected and recorded the sample of