

Measuring the Acceptance of Internet Technology by Consumers

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ABSTRACT

This research reviews studies using the Technology Acceptance Model (TAM) to create a modified model and instrument to study the acceptance of Internet technology by consumers. We developed a modified TAM for the acceptance of Internet-based technologies by consumers. We retained the original constructs from the TAM and included additional constructs from previous literature including gender, experience, complexity, and voluntariness. We developed a survey instrument using existing scales from prior TAM instruments and modified them where appropriate. The instrument yielded respectable reliability and construct validity. The findings suggest that the modified TAM is a good predictor of consumer behavior in using the Internet. We found that attitude toward using the Internet acts as a strong predictor of behavioral intention to use, and actual usage of Internet technologies. Future researchers can use the resultant instrument to test how consumers adopt and accept Internet-based applications.

Keywords: Attitude Toward Using Technology, E-Adoption, Experience, Gender, Internet, Perceived Usefulness, Technology Acceptance Model

INTRODUCTION

This research develops measures for the acceptance of Internet technologies by consumers. Organizations spend millions of dollars annually on the development and enhancement of their Web sites to attract new customers and retain current customers (Amoroso, 2002). By investing in Web-based technologies, firms become more sophisticated by building Web sites with advanced capabilities and greater levels of per-

sonalization and functionality available to their customers (Amoroso & Gardner, 2003). But are consumers accepting these technologies as evidenced by their usage? This paper describes the development and testing of an instrument designed to measure the acceptance of Internet technologies by consumers. We designed this instrument to serve as a tool for the study of the acceptance of Internet-based applications by individuals and an indication of the Internet technology's diffusion from the organization to the consumer.

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Researchers made significant progress over the last decade in explaining and predicting user acceptance of information technologies. In particular, substantial theoretical and empirical support accumulated for the Technology Acceptance Model (TAM) (Davis, Bagozzi, & Warshaw, 1989). Numerous studies found that the TAM consistently explains a substantial proportion of variance in usage intentions and behavior, among a variety of technologies. TAM performs well against alternative models such as the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) (Mathieson, 1991; Sun, 2003). TAM theorizes that two beliefs determine an individual's behavioral intention to use a technology: perceived usefulness and perceived ease of use. TAM serves as a well-established and robust model for predicting user acceptance. TAM functions as one of the most influential research models in studies of determinants of information systems/information technology acceptance (Chau & Hu, 2001).

While increasing numbers of empirical studies on Internet technologies have appeared recently, few studies on determinants of Internet usage and acceptance appeared. Only a small number of these studies focused on Internet technology (Agarwal & Karahanna, 2000, Gefen, Karahanna, & Straub, 2003, Koufaris, 2002, Van der Heijden, 2000, 2003). Much of the research appeared in the marketing area, studying the Internet from the consumer side from the studies using the technology acceptance model. Most studies examined very specific factors, rather than a more comprehensive acceptance model. The current work examines the following objectives:

1. **To review the existing user acceptance models:** This research reviews the current literature on technology acceptance by users and assesses the current state of knowledge with respect to understanding individual acceptance with new information technologies. While some studies look at similarities and differences across

acceptance models, this review examines the technologies from which the studies examine findings. We selected studies that contain analyses relevant to Internet technology and constructs appropriate for our technology. We present a review of acceptance literature in the second section.

2. **To develop a model and metrics for Internet-based technologies:** Based upon the theory developed and empirically tested, we create a model that shows the impacts of the TAM constructs and external variables on consumer-based adoption patterns. We developed hypotheses from the theoretical foundation and empirical results of the studies that impact the consumer acceptance of Internet technologies. We subsequently developed and pre-tested an instrument by using and modifying the Technology Acceptance Model. We tested the instrument scales for reliability and validity and used factor analysis as an assessment of construct validity. We present the development of the model, metrics, instrument, and validation in the third and fourth sections.
3. **To empirically validate the TAM for Internet-based technologies:** An empirical test of the TAM for Internet-based technologies provides preliminary support for the hypotheses of the constructs measuring acceptance by users. Correlational analysis determined the significance of independent relationships of items. Multiple regression analysis helped to ascertain the cumulative effects of items on constructs. We present the empirical validation of the research model in the Analysis section.

THEORETICAL BACKGROUND

In this section, we focus on a key set of studies centered on online consumer behavior and technology acceptance constructs. While we realize that a wider set of studies reference technology assimilation and technology acceptance, we focus on those that advance or

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