Chapter 16
Use of Technology in the Household: An Exploratory Study

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ABSTRACT
Since the 1980s, personal computer ownership has become ubiquitous, and people are increasingly using household technologies for a wide variety of purposes. Extensive IS research has resulted in useful models to explain workplace technology acceptance and household technology adoption. Studies have also found the determinants underlying technology acceptance in the workplace and household adoption are very different from the determinants of household use. Thus, while a great deal is known about workplace acceptance and household adoption, less is known about household technology use. As home computer use becomes prevalent, fewer households are left to adopt and it becomes increasingly important to understand household use. This paper presents the results of an exploratory study of 202 users of household personal computers to test a new model derived from the Model of Acceptance of Technology in the Household (MATH) and another behavior model based on a Decomposed Theory of Planned Behavior.

INTRODUCTION
In the 21st century, technology is pervasive and worldwide. During the past hundred years people have witnessed the potential of technology to change the ways people interact, conduct commerce and, navigate a technology-enabled world (Brown, 2008). People increasingly adopt and use computers to perform their jobs, obtain degrees, network both socially and professionally, communicate, obtain information, and engage in the proliferation of rapidly expanding variety of

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applications. Personal computer ownership has become ubiquitous, and people are increasingly using household technologies for a wide variety of purposes. Neilson data shows that 73% of all households own some kind of personal computer technology (Brown, 2008), and the United States Census Bureau reports that the Internet has transformed households to a venue for work and school (Newburger, 2001). For decades, IS researchers have studied technology acceptance, adoption, and use (Brown, 2008; Venkatesh, 2006). Numerous models have been developed to explain technology acceptance in the workplace. The Technology Acceptance Model (TAM) (Davis, 1989; Davis et al., 1989) is one of the most widely used theories in IS research. The Unified Theory of Technology Acceptance and Use (UTAUT), developed by Venkatesh, Morris, Davis, and Davis (2003), combined TAM with other prominent theories to develop and validate a comprehensive model, the Unified Technology Acceptance Model, for explaining acceptance and use in the workplace. While these models have been found to explain workplace technology acceptance and adoptions, these models do not work in the household.

Research on household technology adoption and use has shown that the nature of technology adoption and use in the household is different from that in the workplace (Brown et al., 2006).

Significant studies on household technology adoption and use (e.g., Brown & Venkatesh, 2003; Brown et al., 2006; Venkatesh, 2006; Venkatesh & Brown, 2001) have resulted in the Model of Technology Adoption (MATH) model, which was found to explain 50 per cent of the variance in adoption (Venkatesh & Brown, 2001) and 74 per cent of the variance when Household Life Cycle is added (Brown & Venkatesh, 2005). The MATH model is less powerful for explaining household technology use as the underlying determinants of adoption and use are different (Brown et al., 2006). Thus, while a great deal is known about adoption of technology by households, less is known about household technology use.

As the household ownership of personal computers nears market saturation, fewer households are left to adopt and it becomes more important to understand household technology use. Research on household technological use is needed to enable individuals to reap the maximum benefits from application of technologies (Brown & Venkatesh, 2006; Venkatesh & Brown, 2001). The purpose of the research is to increase the understanding of the determinants of technology use in households. This paper presents the results of a study of 202 users of household personal computers to test a new research model, which builds on the studies using the MATH model (Brown, 2008; Brown & Venkatesh, 2003, 2005; Brown et al., 2006; Venkatesh, 2006; Venkatesh & Brown, 2001).

LITERATURE REVIEW

Considering that successful application depends on users accepting and using technologies, it is not surprising that technology acceptance, adoption, and usage have been the focus of extensive IS study for decades (Brown, 2008; Venkatesh, 2006). The theoretical models most relevant to this study are those that investigate the determinants of technology utilization in the workplace and households with usage or intention to use as the dependent variable.

Workplace Technology Acceptance

Due to the criticality of technologies to organizations, much of the research has focused on individual use of technologies in the workplace (Davis, 1989; Davis et al., 1989; Venkatesh et al., 2003). The Technology Acceptance Model (TAM) is one of the most influential extensions of the Theory of Reasoned Action (TRA) (Ajzen, 1985, 1991; Ajzen & Fishbein, 1980; Fishbein & Ajzen,