

# Chapter 74

## A Psychological Model to Understand E-Adoption in the Context of the Digital Divide

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### ABSTRACT

*The digital divide is often conceptualised as inequalities of access to technology. While access is obviously a precursor to technology use, research consistently shows that the digital divide is not explained simply by access to technology; apparent in the evidence of digital divides within communities of equitable wealth or within the same geographical location. This chapter acknowledges the interplay between psychological as well as socio-economic factors as important in the adoption of technology. Within this approach we construct a model based on the Technology Acceptance Model, the Theory of Planned Behaviour, Innovation Diffusion Theory, Hofstede's culture framework, and Social Cognitive Theory. The framework for the model is based on a combination of an extension of the Technology Acceptance Model, Innovation Diffusion Theory, and Social Cognitive Theory. The underlying theoretical assumptions are based on Social Cognitive Theory. While some aspects of these individual theories have already been applied to understanding the digital divide, this chapter develops a more comprehensive psychological model of e-adoption than currently exists in the literature.*

### INTRODUCTION

The existence of large disparities between individuals and societies in their access to technology is undisputed (Warschauer, 2002), although the

focus has largely been on information technologies (International Telecommunications Union, 2001). Disagreement exists however, in determining the causes of such disparities. Traditionally the inequalities have been attributed to a host of socio-demographic factors (i.e. race, education, socio-economic status, language, rural commu-

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nities, etc.) based primarily on socio-economic aspects as predictors of access to technology and therefore as the best indicators of the digital divide (e.g. Hoffman, Novak & Schlosser, 2000). However, Warschauer (2002) warns against defining the digital divide in terms of qualities such as “haves” and “have-nots”. There is growing evidence that disparities in technology use continue even when the technology is available, for example the digital divide based on age factors (Venkatesh & Brown, 2001). Recent data suggest that the relatively high cost of technology in some communities is not always the only causal factor in not adopting technology (Lenhart et al., 2003). Green (2001) for example, suggests that the use of technology is socially bound, being determined by access to education and training, the perceived application within a society, and by individual ability. This situation is familiar to researchers working on psychological models of technology acceptance where it has long been recognised that simply providing people with access to technology does not guarantee that it will be adopted and used. In its extreme manifestation the failure to adopt technology has sometimes been referred to as technostress or computer anxiety (Igbaria & Parasuraman, 1989; Weil & Rosen, 1987). It must be noted that the psychological approach does not dismiss access as an unimportant variable. After all, there are few psychological e-adoption factors to consider if a person does not have access to a particular technology. Access, or the availability of technology, therefore forms the first basic pillar of the psychological model presented later in this chapter.

This chapter begins by presenting the major technology acceptance models that are based on psychological theories. Technology acceptance models arguably represent the general case for technology adoption, with the digital divide arguably representing a special case for technology adoption because of the unique social factors. Next we explore social cognitive theory, the primary psychological theory used in developing our new

psychological model of e-adoption in the context of the digital divide, and how this theory relates to the technology acceptance models. We also explore Hofstede’s culture framework and how it might be applied to understanding e-adoption within a framework of technology acceptance models. The penultimate section looks at studies that have specifically used aspects of social cognitive theory and the technology acceptance models to specifically understand the digital divide. The last section presents the new psychological model that emerges from an understanding of social cognitive theory, a culture framework, and reciprocal causality. The chapter concludes with some suggestions for future research based on this model.

## **BACKGROUND: PSYCHOLOGICAL MODELS OF TECHNOLOGY ADOPTION**

### **Technology Acceptance Model**

One of the most widespread and empirically tested models of technology acceptance using a psychological framework is Davis’ (1989) Technology Acceptance Model. The Technology Acceptance Model is loosely based on Ajzen and Fishbein’s (1980) Theory of Reasoned Action although it replaces many of the attitudinal components in the Theory of Reasoned Action with only two technology-related attitudes, *perceived usefulness* of the technology and *perceived ease of use* of the technology. Davis (1989) argued that high positive ratings of these two attitudes would lead first to intentions to use a particular technology and then, if the intention levels were high, this would lead directly to the actual use (behaviour) of that technology (see Figure 1). The Technology Acceptance Model has been tested successfully on a wide variety of technologies including general information systems (Mathieson, 1991), computer applications (Karahanna, Straub & Cher-

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