Application of an Extended TAM Model for Online Banking Adoption: A Study at a Gulf-Region University

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ABSTRACT

The understanding of factors leading to the acceptance or rejection of information systems (IS) is important and relevant. Although there have been studies examining the adoption of Internet Banking (IB), research on this topic in the Gulf context and from an IS perspective is lacking, even though societal factors are acknowledged as having an impact on technology adoption. To fill this gap, this paper uses a version of the Technology Acceptance Model (TAM), extended by the compatibility and trust constructs. An empirical study, using students from a large university in the region, validates the research model.

Keywords: End-User Computing, Gulf Cooperation Countries, Information Technology, Online Information Systems, System Acceptance, Technology Adoption Model, Theory of Planned Behavior

INTRODUCTION

Since the mid-1990s, an increasing number of banks, including those in the Gulf Cooperation Countries (GCC1), have expanded to provide their services over the Internet. Internet Banking (IB), also referred to as online banking, is defined as a system in which customers use an Internet browser to conduct various banking transactions (e.g., transferring of funds). The changes by banks have spawned behavioral changes in society as well, in the sense that customers no longer need to visit a bank to undertake routine transactions, owing to any-time, anywhere nature of Internet banking. Sophisticated customers, who are usually the more profitable clients, value this service most (Suh & Han, 2002). As a result, there is evidence of Internet banking obtaining significant adoption in developed and developing countries (Migdadi, 2008).

IB adoption in the GCC is facilitated by the upgrading of telecommunication infrastructure, as well as by the changing attitudes of the population—a survey found that almost 20% of the customers are willing to move to another financial institution, if their current bank fails to offer online banking services (Guru et al., 2003). Despite this, there are no studies directly relating to IB-adoption in the region.

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the region. In addition, even in the non-Gulf context, adaptations of IS theories to study IB-adoption are beginning to emerge (Suh & Han, 2002; Sundarraj & Wu, 2005). Given the IS interface that is part of IB, such theories can help with the identification of the reasons (or antecedents) behind IB adoption.

Information Technology (IT) acceptance research has yielded many competing models, each with different set of acceptance determinants. This research adopts the Technology Acceptance Model (TAM) (Davis, 1989) that has been used to explain individual acceptance in a variety of contexts. TAM is tailored to information Systems (IS) context and has been widely applied to a diverse set of technologies and users within the IS domain (Venkatesh et al., 2003). Based on TAM prior research has extended with a number of constructs; including trust and compatibility (Suh & Han, 2002; Venkatesh et al., 2003). In this research, TAM is extended with two constructs trust and compatibility that has been found to be applicable to the Internet domain. Furthermore, the societal context of this study is in the GCC region which never been considered in prior research of IB. This is particularly significant owing to the knowledge-based financial growth facilitated in the region. The extended TAM model is tested with an empirical survey of students from a large university in the region. Data from the survey is then used to validate the proposed model using statistical analyses.

In the next section, background literature is surveyed and the contributions of this paper are identified. The research model and the resulting hypotheses are discussed, and design of the empirical study is given. The results are then presented. Finally, the implications of this research and the conclusions of the paper, respectively, are given.

**CUSTOMER ADOPTION MODELS**

One approach to IB is a pure stand-alone model, which is followed mainly by small- and medium-size institutions. The more prevalent offering, as of this writing, is an integrated approach consisting of branch services as well as Internet-based services. IB services have expanded considerably in Saudi Arabia, Qatar, Kuwait and UAE. While all these services indicate the level of importance that banks place on IB, they do not provide any hints concerning customer acceptance. Thus, the remainder of this section surveys models related to technology-adoption.


In addition to these applications to general IS, studies of IB from an Information Systems (IS) perspective are beginning to emerge (see Suh & Han, 2002; Guru et al., 2003; Migdadi, 2008; Tan & Teo, 2000; Liao et al., 1999; Van Der Heijden, 2004; Teo & Pok, 2003), even though researchers (e.g., Paré, & Elam, 1995) have underlined the importance of studying new information systems.

Suh and Han (2002) modified TAM and introduce the trust construct; however, their model and empirical validation is slightly different from ours research. Sundarraj and Wu (2005) use a parsimonious version of TAM to study IB adoption.

Tan and Teo (2000) and Liao et al. (1999) study usage-intention of IB using an alternate model, namely, the Theory of Planned Behavior (TPB). The first study found that certain attributes of the attitude and perceived behavioral control constructs to be significant to adoption intention. Subjective norm was not significant to intention, and $R^2$ value for adoption intention was not reported. In Liao et al. (1999), the subjective norm construct did not have adequate reliability. Hence, that construct was not used, but instead, attitude and perceived behavioral
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