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Diffusion of Innovation and Personality Traits: The Case of Mobile Banking

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ABSTRACT

The adoption of mobile banking has received increasing attention in the past decade. Yet, researchers have not agreed on the factors affecting the speed of mobile banking adoption. Our objective in this research-in-progress is to analyze the speed of the adoption of mobile banking, moderated by the personality traits. The model presented is based on the theory of diffusion of innovation. We propose that those who have higher level of openness to experience are willing to adopt mobile banking faster than those who have lower level.

KEYWORDS: Mobile Banking, Diffusion of Innovation, Personality Traits, and Openness to Experience.

INTRODUCTION

Mobile banking refers to the use of Information Systems (IS) empowering customers to perform a range of financial transactions through Information and Communication Technologies (ICTs) (Anderson, 2010). Financial transactions vary from transfer of money and balance inquiries, to deposits, etc. Generally, mobile banking introduces smarter techniques of doing banking that benefit both the client and the bank. Over the last few years, banks and financial institutions have started to develop and maintain online banking and brokerage to bridge the gap between them and customers. Until now, not all customers are using the mobile banking systems. Customers are still resisting to adopt these systems. This research in progress examines factors impacting mobile banking adoption.

Despite the fast growing of electronic market and online banking, mobile banking is still having a hard time grasping the broad users of cellphones. Several studies focused on showing factors and advantages of adopting mobile banking as a smarter approach to financial services. Anderson (2010) investigated the creation of consumer value in developing markets through mobile banking. The study revealed that mobile banking is able to accommodate primary banking and electronic transactions services to unbanked consumers in developing markets. Other studies have shown that it drives a technological innovation by allowing customers to do their banking operations with disregard to time or place and in an easy way (Laukkanen, 2007). Using mobile banking facilitates payments and helps to avoid lines and physical presence in a financial institution (Mallat, 2007). In fact, it has the power to harness higher productivity for banks while making user's lives much easier (Malaquias and Hwang, 2015).

Laforet and Li (2005) studied mobile banking in the Chinese market and investigate its capabilities to develop a large-scale Internet economy and found that most online banking users are males (53%) and younger consumers (57%) showed more emphasis in adopting mobile banking rather than elders. Furthermore, the lack of knowledge and perception of outcomes were one the main obstacles to mobile banking adoption in the Chinese market (Laforet and Li, 2005). Luarn and Lin (2005) investigated the factors that drives users' acceptance of mobile banking. By adding three more factors (perceived credibility, perceived financial cost and perceived self-efficacy) to the standard technology acceptance model (TAM) from previous studies, the new model depicted a stronger capability to analyze users' intention to use an information system (Luarn and Lin, 2005). Tan et al (2009) investigated innovative characteristics, benefits and barriers influencing ICT adoption and found that Internet-based ICT adoption provides a low cost yet effective communication tool for customers. However, security continues to be a major barrier. Poon (2008) found that convenience of usage, accessibility, features availability, band management and image, security, privacy, design, content, speed, and fees and charges have a significant impact on e-banking adoption and resistance in Malaysia.

To our best knowledge, no research has investigated the moderator effect of personality traits on mobile banking adoption. Thus, this research fills a gap in the current literature.

DIFFUSION OF INNOVATION

The theoretical foundation for most technology adoption research is found in the diffusion of innovation literature (Rogers, 1983) which studies the process of technology diffusion and the factors influencing technology adoption decisions. Diffusion is defined as the process by which an innovation is adopted and gains acceptance by people (Rogers, 1995). Based on this definition, a number of researchers use time of adoption to assign individuals to adopter categories based on random categorization (Goldsmith & Hofacker, 1991). Usually, when new innovations (technologies) come about, they are only adopted by a small group of people initially; later, they spread to other people (Kapur et al., 2010).

Innovativeness is defined as the degree to which an individual makes innovative decisions independently of the communicated experience of others (Midgley & Dowling, 1978). That is, it is an individual's predisposition to behave in a given way regardless of the stimuli that activates the behavior (Foxall & Szmigin, 1999). This simply means that innovativeness is viewed as an enduring personality trait possessed to a greater or lesser degree by all individuals. Usually, innovators tend to have more social participation, have greater exposure to mass media, and seek more information about an innovation (Rogers, 1995) than later adopters. Thus, this concept views innovativeness as a personality state, rather than a global tendency to behave in a certain way.

Rogers (1983) focuses on the adoption process itself, classifying adopters according to the point in time at which they adopt new technologies. Individuals do not adopt an innovation (new technology) at the same time; they adopt it in a sequence. An innovation will be adopted slowly at first then increases its diffusion speed as more and more people adopt it. Thus, individuals can be classified into five adopter categories based on their innovativeness. These categories are: innovators, early adopters, early majority, late majority, and laggards. In addition to the characteristics of adopters, there are different characteristics of innovations that also help to explain the differences seen in adoption rates. Usually potential adopters judge an innovation based on their perceptions in regard to five characteristics of the innovation. These

characteristics are: Relative Advantage; Compatibility; Complexity; Trialability; and Observability.

Relative advantage:

It is the degree to which a new technology is perceived as better than the method or technique used. Convenience and satisfaction are important factors that play important role in leading people to adopt new technology and leave the old method. Usually, what helps individuals to adopt new technology is whether they perceive the innovation as advantageous or not. The higher the perceived relative advantage of an innovation, the faster they will adopt it.

Compatibility:

It is the degree to which a new technology is perceived as being consistent with the existing values, past experiences, and needs of potential adopters (Rogers, 1995). The higher the level of compatibility, the faster the adoption of the new technology will be. As a matter of fact, a new technology that is not compatible with the values and norms of a social system will not be adopted and in case it will be adopted, this will be slow and after passing some times.

Complexity:

It is the degree to which a new technology is perceived as difficult to understand and use. Some innovations are easily understood by most members of the society; others are more complicated. The simpler the new technology, the faster it will be adopted. Usually, new technologies that require the adopter to develop new skills and understandings will be adopted slowly.

Trialability:

It is the degree to which a new technology may be experimented with a limited basis. The higher the chance of trialability of the new technology; the faster people will adopt it. This is due to the decrease in the level of uncertainty that people have before tried it and getting the chance to see how it functions in reality. Usually, people are afraid of new technology unless they try it.

Observability:

It is the degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they will adopt it. Also, this will help adopters to convince other people to adopt the new technology.

PROPOSED RESEARCH MODEL

Given the possibility that the characteristics of innovations help to explain the differences in adoption rates; what are the possibilities that lead a person to adopt mobile banking fast or not? In this research in progress, we argue that openness to experience moderates the relationship between the factors of Diffusion of Innovation theory listed above and mobile banking adoption. Figure 1 presents the proposed research model.

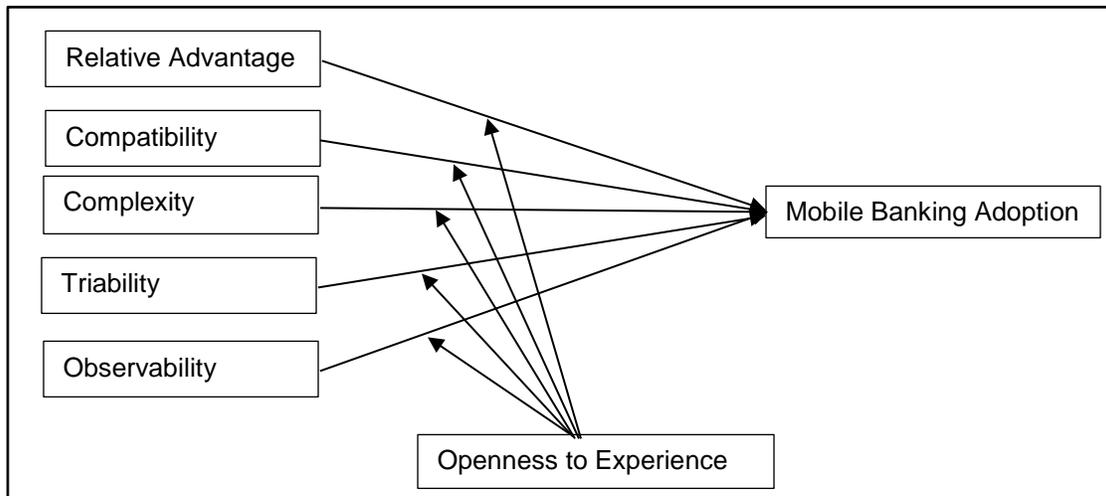


Figure 1: Research Model.

Openness to Experience

It is the willingness to experience and try new and different things. Openness to Experience is a personality dimension that characterizes someone who is intellectually curious and tends to seek new experiences and explore novel ideas (Zhao & Seibert, 2006). Usually individuals who have high level of openness to experience can be described as creative, innovative, imaginative, reflective, and untraditional and they tend to be more accepting, less judgmental, have higher level of tolerance for accepting new things. In the same vein, these individuals would be more prone to view technology as a provider of great advancements and then they would tend to be more accepting of technology (korzaan & Boswell, 2008).

Because rapid change and diversity are now the norm in business organizations, openness to experience will be increasingly important in explaining work-related behavior (Hough & Furnham, 2002). Those low on this dimension prefer to not change the instrument they are using or the way they do their normal things. Thus, those individuals who are high in openness to experience are more likely to hold positive attitudes and cognitions toward accepting mobile banking in part because of their predisposition to embrace new things; they are less threatened by the change implied in adopting technology. Moreover, their desire to do and try varied things that are the core facet of openness to experience and this will influence their judgment about the utility of the technology. Behavioral decision theory shows that people tend to seek and weight more heavily information that is in agreement with their beliefs and desires while discounting information inconsistent with their preferences, a phenomenon known as the confirmatory bias (Bazerman, 1994). Therefore, more open personalities will strongly weight arguments that are consistent with their innate preference to use the new technology (in this case mobile banking). Agarwal et al. (1998) posit that early adopters of IT innovation showed greater willingness to try out new IT technology than do later adopters. Subsequently, Rogers (1995) when described the differences of early and late adopters, found that early adopters have greater social interaction, and have larger networking connections in the relevant social system than later adopters. As a result, Individuals, who have high levels of openness to experience, will adopt new technology faster than those who have low level of openness to experience. Therefore,

Proposition 1.b.: Openness to experience moderates the relationship between relative advantage and mobile banking adoption.

Proposition 2.b.: Openness to experience moderates the relationship between complexity and mobile banking adoption.

Proposition 3.b.: Openness to experience moderates the relationship between triability and mobile banking adoption.

Proposition 4.b.: Openness to experience moderates the relationship between observability and mobile banking adoption.

Proposition 5.b.: Agreeableness moderates the relationship between compatibility and mobile banking adoption.

PROPOSED METHODOLOGY

Research Method and Measures

The survey methodology is used to assess and investigate the mobile banking diffusion model. The instrument used for this study will be based on previously validated measures. The majority of the scale items are adopted from the previous literature but adapted to the mobile banking context.

Proposed Analysis Methods

The data collected from the survey instrument will be subjected to various statistical tests. The first analysis tests the data for outliers and normality. After this, construct validity, convergent validity, and discriminant validity will be checked. After confirming the validity of the instrument, Structural Equation Modeling (SEM) will be used to assess and investigate the hypothesized causal paths among the constructs by performing a simultaneous test. This helps to determine if the presented conceptual model had provided an acceptable fit to the empirical data gathered or not.

CONCLUSION

Based on Rogers' theory "the diffusion of innovations", which is one of the most important researches of innovation adoption behavior and by using one of the characteristics of personality traits, we introduced a model that helps to identify those who adopt mobile banking very fast. From Rogers' theory, the innovations characteristics were used, which are: relative advantage, compatibility, complexity, trialability, and observability. These characteristics were used by this theory as factors that affect the speed of adoption. Basically, in his theory Rogers utilizes a distribution to distinguish between five categories of adopters: innovators, early adopters, early majority, late majority, and laggards. This distribution is based on the time the person spend to adopt the new technology. But this theory did not take into consideration the personality traits and how they affect the speed of adoption. In the model proposed, we introduced openness to experience to be a moderator between these factors and mobile banking adoption.

Based on this, this research in progress is believed to fill a gap in the literature. As mentioned previously this study is the first to discuss the moderator effect of personality traits on the speed of adoption and specifically openness to experience. In the future researchers will find this study important since they can add in top of this model other factors in order to get a holistic final model that can explain this aspect. Also, it should be noted that this study is a conceptual piece; empirically assessing the model presented above will definitely enrich the body of knowledge and assure the significance of this study.

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