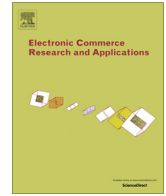




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Message framing and acceptance of branchless banking technology

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ABSTRACT

Mobile communication technologies are ubiquitous and span a wide range of applications. The present study assessed the effects of message framing on the public acceptance of branchless banking applications using the unified theory of acceptance and utilization of technology (UTAUT). Adult holders of an active bank account were randomly assigned into three message framing conditions (gain frame, loss frame, and control condition), and completed structured anonymous questionnaires on technology acceptance variables derived from the UTAUT. Analysis of variance (ANOVA) showed that message framing manipulations did not influence directly self-reported scores on technology acceptance variables. However, linear regression analyses showed that message framing differentiated the interrelationships between usage intentions and related UTAUT variables between conditions. Moderated regression analysis further showed that gender interacted with performance expectancy in predicting usage intentions in the control group condition. Message framing manipulations influence the way intentions to use technology relate to technology acceptance beliefs. This effect should be further examined in the context of technology acceptance models in e-commerce applications, and more especially in the branchless banking domain. Efforts to promote branchless banking applications would benefit from assessments of potential users' technology acceptance beliefs and intentions.

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1. Introduction

1.1. Online banking technologies

As technology evolves, mobile communication technologies become widespread and ubiquitous, and permeate different domains of social, private, and economic life. The banking sector has followed the recent trends in mobile communications by adopting wireless banking applications for financial transactions and bank account management (Luarn and Lin 2005, Zhou et al. 2010). Mobile banking can be seen as an important aspect of e-commerce that can improve revenues for both banking and telecom providers, generate added value, and give a significant competitive advantage to financial institutions (Kim et al. 2009, Roth 2013). However, several studies have shown that while customers sign up for mobile banking services, only a small fraction actually uses these services (Luarn and Lin 2005). To illustrate, although 1.5 million people signed up for mobile banking services in Taiwan in 2009, less than 2.3% banking transactions were realized through mobile banking (Lin 2011).

Another study from Germany showed that while Internet use is widely prevalent among the population, only a small number of Internet users signed up for and used internet-based banking services (Röcke and Kaulen 2014). Nevertheless, the multi-million investments made in mobile banking services can hardly pay off unless customers utilize those services effectively (Luarn and Lin 2005, Zhou et al. 2010). Researchers have called for greater attention to the psychological processes that underlie customers' attitudes and intentions to use mobile banking services, as doing so can lead to greater insights into the factors that motivate customer engagement with, and effective utilization of mobile banking applications (Laforet and Li 2005, Zhou 2012, Zhou et al. 2010).

1.2. Online banking in Albania

The present study was conducted in Albania, an economically developing country with 16 commercial banks, most of which are offering e-banking services, but with a considerably low utilization of e-banking among customers. Accordingly, mobile banking initiatives are at their early stage and related technological applications are not yet adopted by customers. One reason that explains low adoption of mobile banking in Albania relates to Internet use among the population. More specifically, Albanian

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bank customers are required to have a smartphone, a tablet or a PC in order to access e-banking or mobile banking services.

However, Internet use in Albania is low (62.7%) as compared to European Union's average (78.5%; [Internet World Stats 2015](#)). Another reason that explains the low adoption of mobile banking applications in Albania is the limited range of services offered by Albanian banks, and the low efficiency of some online operations. For example, it takes up to 3 days for an interbank money transfer initiated through e-banking to complete, whereas the time required for this operation in conventional banking (visiting a branch) is much shorter. In this cultural context, Albanian customers are reluctant to use online or mobile banking applications, and are more likely to resort to more conventional banking services that require physical presence.

1.3. Banking omni-channels

From ATMs to e-banking and mobile banking, banks are striving to provide multi access channels for customers. The omni-channel experience is evaluated to be a key improvement area for banks. Smart (or branchless) banking is another way of providing high quality banking services to customers with the use of the next-generation ATMs that were introduced in 2013 by Citibank as 'Citibank Express Machines', and provide nearly all the services of a conventional bank branch ([Holley 2013](#)). The next-generation ATMs are the forerunners of the smart banking industry and, in contrast to e-banking and mobile banking, offer almost all of the banking services without physically visiting a branch and without requiring any special mobile devices and Internet access. The customers can open an account and apply for loans, cards and cashier's checks, make video conference with the bank, and fully complete a transaction through the next-generation ATMs. The deployment of the Citibank Express Machines was preceded by empirical research in customer behavior ([Holley 2013](#), [Singapore Business Review 2013](#)).

2. Theory

2.1. Technology acceptance and utilization

Concerns about the acceptance and utilization of technology over the last two decades has spawned research on technology acceptance, with the technology acceptance model (TAM; [Davis 1989](#)) being the most prominent theory in this area ([Bagozzi 2007](#)). This model suggests that technology acceptance is a volitional process, and usage intentions and attitudes will determine actual utilization of the technology in question. Attitudes represent a proxy predictor of usage intentions. In turn, attitudes towards the technology are driven by two main factors: the user's perceptions about the expected utility or usefulness (how the acceptance of the technology will make a difference in the user's life), and the perceived easiness of using the technology (whether it will be easy/effortless or difficult/effortful to use the technology). Empirical support for the TAM model comes from a wide range of studies on diverse technological innovations, from e-commerce, to e-health and smart phone use ([Holden and Karsh 2010](#), [King and He 2006](#), [Koufaris 2002](#), [Pavlou 2003](#)).

The TAM has undergone several reformulations ([Davis et al. 1989](#), [Venkatesh and Bala 2008](#), [Venkatesh and Davis 2000](#)), and this line of research led to the development of the unified theory of acceptance and utilization of technology (UTAUT; [Venkatesh et al. 2003](#)), a model that is built on the premises of TAM but describes a different process for linking perceptions towards technology to actual usage. Alike the original TAM approach, the UTAUT emphasizes the role of usage intentions as the more im-

mediate predictor of actual technology acceptance and utilization. However, the variables that determine usage intentions in UTAUT comprise effort expectancy (how easy or difficult it will be to use the technology), performance expectancy (the anticipated benefits in performance from using the technology), facilitating conditions (external factors or personal characteristics that facilitate the use of the technology), and social influence (normative perceptions about the use of technology by referent groups).

It is noteworthy that performance and effort expectancies within the UTAUT are similar to perceived usefulness and ease of use in the original TAM ([Dwivedi et al. 2011](#)). [Venkatesh et al. \(2003\)](#) further argued that these determinants of intentions interact with a range of personal characteristics, such as demographic variables (age and gender), past experience with using the technology or similar technological applications, and voluntariness of use (the extent to which technology acceptance is a voluntary vs. mandatory action). The UTAUT has received empirical support with respect to diverse technological innovations, including, e-health and mobile banking, and is currently considered one of the most prominent theories of technology acceptance and utilization ([Abu Shanab and Pearson 2007](#), [Gruzd et al. 2012](#), [Holden and Karsh 2010](#), [Im et al. 2011](#), [Zhou et al. 2010](#)).

2.2. Message framing and technology acceptance

Theories of technology acceptance, like the UTAUT, can provide a better understanding of attitudes and intentions towards technology use among customers, and of the underlying decision-making process. However, decision-making is also influenced by heuristics, such as the framing of information that is presented to a target audience ([Gallagher and Updegraff 2012](#), [Tversky and Kahneman 1986](#)). In the domain of new technologies, technology acceptance is partly determined by the potential users' perceptions of potential benefits (gains) or risk (loses; [Bruhn 2007](#)). Research on prospect theory has shown that framing information in terms of potential gains (what one will gain by using a service) or losses (what one will lose from not using a service) can have differential effects on decision-making (whether the service will eventually be used).

When a gain frame is used, the expected benefits of making a choice are made salient, and when loss framing is used the anticipated negative consequences of the choice are highlighted ([Salovey and Williams-Piehot 2004](#)). Research in marketing has shown that gain framing led to more positive attitudes and intentions to purchase whitening products ([Arora 2007](#)). In a study of e-commerce, online shoppers reported more positive attitudes and higher purchase rate when gain framing was used, compared to loss framing ([Wu and Cheng 2011](#)). Although, message framing has been examined in relation to purchase attitudes and intentions, and customer perceptions about products, there is limited research on the effects of message framing in the context of acceptance of branchless banking technologies, and especially in the context of smart banking services, such as Citibank Express Machines.

3. The present study

So far, the UTAUT has been successfully applied in the context of e-banking technologies ([Abu Shanab and Pearson 2007](#), [Zhou 2012](#)). However, no study has yet addressed the influence of message framing manipulation on technology acceptance variables, such as usage attitudes and intentions. If users' acceptance tendencies are influenced by the framing of a new technology attributes, then message framing manipulations should accordingly influence the way users decide to use or discard emerging technologies

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