Internet Banking: Enablers and Inhibitors for Developing Economies – A Study of Potential Users in Jamaica

Completed Research Paper

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Abstract
With advances in information technology, internet banking in developing countries is increasing in popularity, giving individuals more choices in how they do their banking. However, the uptake by individuals especially for developing countries has been slow, despite increased access to enabling technologies. While much has been done to determine what encourages adoption, little is known of what hinders internet banking in developing countries. As technology advances an understanding of these hindrances will be critical for these innovations to be successful. Drawing on Diffusion of Innovation Theory and prior research a combined model of perceived risk, perceived security, switching costs, and other technology attributes, and social influence, is examined to determine what may deter individuals from doing their banking online. Data from 92 potential users of internet banking is used to explore the research model. The findings are reported and implications for practice and future research discussed.

Keywords
Diffusion of Innovation Theory, Internet banking, Social Influence, Developing Countries, Jamaica

INTRODUCTION

Internet banking refers to “the use of the Internet as a remote delivery channel for banking services, including traditional services, such as opening a deposit account or transferring funds among different accounts, as well as new banking services, such as electronic bill presentment and payment, which allow customers to receive and pay bills over a bank’s Web site.” Internet services may be offered alongside traditional channels such as over-the-counter services and other self-service channels such as ATMs, mobile and telephone banking, and Short Messaging Services. Especially in developing countries, where internet banking is not the norm, this innovation is seen as a way to distinguish firms in the marketplace and offer a low-cost, easy-access alternative for banking. However, benefits can only be achieved for firms if internet banking is widely adopted and used over other means by its target market. For banking customers, the greater the uptake the more likely it is that services will be added and others improved.

There have been many studies of internet banking adoption in developing countries including South Africa (Brown et al., 2004), Mauritius (Juwaheer, Pudaruth and Ramdin, 2012), Pakistan (Akhaq and Ahmed, 2013), Thailand (Jaruwachirathanakul and Fink, 2005) and Nigeria (Onyia and Tagg, 2011). Most studies show that these economies still have a long way to go to achieve relatively wide spread use of internet banking. While most focus on identifying correlates and factors linked to the uptake of internet banking (e.g. Onyia and Tagg, 2011), few attend to factors that are likely to hinder use of internet banking or the impact of social factors. Most also do not evaluate the perceptions of non-users. To address this gap, this study will examine the perceptions of non-users of internet banking in Jamaica with a focus on factors that influence use intentions and impact perceptions.
Development of Internet Banking in Jamaica

Internet banking was first launched in December 2002 by the National Commercial Bank (NCB), followed by the Bank of Nova Scotia (BNS) in September 2003. Although there are currently seven commercial banks in Jamaica that now offer internet banking, the NCB and BNS are by far the most significant players in the banking sector, accounting for over 75% of the commercial banking market (Harriott, 2010). By 2009 with increases in service charges, these banks were reporting significant growth in the number of customers using internet banking, and in the volume of transactions processed through by internet banking. For example, in 2009 BNS reported that 10% (37,000) of its active customers were using internet banking; by 2010 the number of online customers had increased to 20% (Collinder, 2009, 2010). NCB also reported that eBanking accounted for 46% of all transactions conducted in May 2009, up from 42% in the previous year. However, this statistic did not distinguish individual transactions from business and government transactions (Collinder, 2009). Furthermore, it was reported that “Only a minority - 36 per cent - of users who log on to NCB's e-banking service actually do a transaction, leaving the bank official to speculate that the other 64 per cent are checking bank balances or utilizing the email option to make service requests” (Collinder, 2010).

Although service fee increases related to other means of banking may drive some persons to use internet banking which has lower service fees, the evidence suggests that these mechanisms may not be sufficient to overcome other factors that may be constraining use. Nor is it known whether factors that are commonly identified as promoters of technology adoption and use (such as perceived usefulness) are enough to convince individuals to do more of their banking online. So, although internet banking is becoming a more common feature in financial services sectors in developing countries, statistics such as those reported in Jamaica suggest that significant uptake is still low even among current users, despite enhanced connectivity and access to the Internet.

There are a number of factors that may contribute to the slow uptake of internet banking in developing countries like Jamaica. For example, Collinder (2009) reported that security concerns were possibly one of the hindrances to internet banking growth, with banking officials commenting that they “believe the growth in the use of their online service will continue to increase as customers overcome security concerns. ‘Security in the past was one of the hurdles, but now they [the people] know the system is a world-class system in terms of world-class protocols’”. Nonetheless, beyond such speculations it is evident that little is known about the factors that impact the uptake of internet banking in Jamaica.

This study therefore aims to investigate factors that influence the uptake of internet banking in a developing country. Although many studies have investigated factors that influence the adoption of a technology, most focus on current users who have already made the decision to adopt the technology. With this focus there is an implicit assumption that if one addresses the elements that encourage adoption and continued use, then non-users will follow suit. It is important however, to know from the perspective of the non-user what impacts their decision to adopt and use an innovation as these factors and their impact on use intention may differ for users when compared with non-users (Taylor & Todd, 1995). Yet, only a few studies have examined the views of non-users (e.g. Brown & Vankatesh, 2005) with most being conducted in developed countries. Further, with relatively little analysis done at the individual level when examining the use of ICTs in developing countries (Walsham and Sahay, 2006), the results of this study are expected to add to the literature on technology adoption and use in developing countries, as well as contribute specifically to understanding the adoption of internet banking in the Caribbean, in particular, Jamaica.

LITERATURE REVIEW

Prior research on Internet banking adoption suggests that factors such as perceived usefulness, compatibility with values, internet experience, banking needs, trialability, perceived risk, attitude, self-efficacy, and government support may influence individual intentions (Jaruwachirathanakul and Fink, 2005; Sohail and Shannmugham, 2003; Tan and Teo, 2000). For example, Tan and Teo (2000) found that perceived usefulness, compatibility with values, internet experience, banking needs, trialability, and perceived risk impacted attitude, while intention to adopt internet banking was impacted by attitude and perceived behavioral control. However, most of the studies to date have been conducted in developed countries with few attending to developing regions, in this case the Caribbean and in particular, Jamaica.

To better understand the adoption of technology by individuals, innovation and diffusion studies have examined the role of the social network into which the technology has been introduced (e.g. Rogers, 2003). This body of research
suggests that in the initial stages of diffusion, while some will make their decision to use the technology independently of others the majority are more likely to be influenced by others in the social system. Social influences may also function as a key channel of communication in the social system informing people’s perceptions about the innovation. Social influences (i.e. through interactions with peers and others in the social system) may therefore play a key role in the innovation-decision process, by creating awareness-knowledge, informing perceptions about the technology and directly influencing the decision to adopt (or not adopt) an innovation (Rogers, 2003). For example, Teo and Pok (2003) reported that social influences may play a significant role in forming individual perceptions about attributes of a mobile Internet service, and by extension influence the adoption of the service. However, the role of social influences as a key channel of communication about attributes of a technology (Rogers, 2003) and how this might influence adoption of an ICT (Venkatesh and Bala, 2008) has been understudied.

As banks continue to invest in alternative ways to provide and improve service delivery it is important to understand the factors that motivate an individual to use particular channels. To address this gap, this study will examine the factors that influence an individual’s decision to use Internet banking. In particular, this study will focus on factors identified within the sample context that appear likely to hinder adoption, that is, perceived security, perceived risk, and switching costs. Given that prior work shows that attributes such as perceived usefulness and perceived ease of use are key to innovation decisions, these are included in the model to control for their impact on the adoption decision, and help determine whether the hindrances identified are significant enough to undermine the adoption decision over and above the influence of pro-innovation factors such as perceived usefulness. Further, given the significance of social influence in relation to the adoption-decision and in informing ones’ perceptions about a technology (Rogers, 2003), the impact of social influence is also examined.

THE RESEARCH MODEL

IS research has often relied on behavioral theories to understand the adoption and use of information technologies. Among these, the most widely used frameworks are the Technology Adoption Model (TAM), Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and Diffusion of Innovation Theory (Ajzen, 1991; Davis, 1989; Rogers, 2003). Together these frameworks suggest that beliefs about a technology impact behaviors towards that technology. Behavior may also be influenced by attitudes, social norms, and perceived behavioral control.

Drawing on Diffusion of Innovation (DOI) Theory (Rogers, 2003), the Technology Adoption Model (TAM), and the Theory of Reasoned Action (TRA), the focus of this study is on an individual's intention to perform a particular behavior or action (Ajzen & Fishbein, 1980). These intentions indicate how hard people are willing to try to perform the given behavior (Ajzen & Fishbein, 1980), in this case – intention to use Internet banking. DOI theory alongside TAM-related research further suggests that perceived attributes of an innovation such as relative advantage (similar to perceived usefulness) and complexity (similar to perceived ease of use) may impact the adoption decision.

Social influence is also a key element of DOI theory. Also referred to as subjective norms, the concept of social influence considers the perceived impact of particular groups or persons that would think the individual should perform (or not perform) a particular behavior (Ajzen & Fishbein, 1980). As such more favorable norms should lead to stronger behavioral intentions. Social influence, though not prominent in early IS adoption frameworks (e.g. TAM) was included in later models and extensions. However, most studies have been inconclusive about the role of social influence in the diffusion process, with some providing strong support for its inclusion (Teo and Pok, 2003; Venkatesh et al., 2000) and others finding no support (Lewis et al., 2003).

Drawing on key theoretical perspectives from DOI theory this study proposes a model of internet banking adoption that incorporates factors that may impact the adoption of internet banking in the social system. Key innovation characteristics are also considered and controlled for (i.e. perceived usefulness and perceived ease of use), so as to distinguish the effects of enablers from inhibitors. Social influences that derive from interpersonal connections are also considered (Ajzen, 1991; Venkatesh and Bala, 2008). In particular, the framework suggests an individual’s intention to do Internet banking is a function of their perceptions about the innovation (including factors that constrain behavioral intention), and the social influences that help to form these perceptions (Ajzen, 1991; Rogers, 2003; Venkatesh and Bala, 2008).

DOI theory identifies perceived usefulness and perceived ease of use as key technology attributes that impact Internet banking use intentions. Hence, behavioral intention is jointly determined by perceived usefulness and perceived ease of use. Several studies have confirmed the importance of perceived usefulness and perceived ease of use as key technology attributes that impact Internet banking use intentions.
use as predictors of intention to use a technology (Taylor and Todd, 1995; Venkatesh and Bala, 2008). These also suggest that perceived usefulness is influenced by perceived ease of use of the innovation. Hence it is expected that:

H1: Perceived ease of use is positively related to perceived usefulness.
H2: Perceived ease of use is positively related to intention to use internet banking.
H3: Perceived usefulness is positively related to intention to use internet banking.

Perceived risk has a long tradition in consumer behavior research. Featherman and Pavlou (2003) refer to perceived risk as a "felt uncertainty regarding possible negative consequences of using a product or service". Cox and Rich (1964) suggested that an element of risk is always inherent in the consumer-decision process since one cannot always be certain that a product (or service) will achieve intended goals. In evaluating perceptions of risk in e-services, prior research found that perceived risk had a negative impact on perceived usefulness (Featherman and Pavlou, 2003). Research also suggests perceived risk is inversely related to attitude and intention (Laukkanen, Sinkkonen and Laukkanen, 2008; Liao and Cheung, 2001; Vijayasarathy, 2004); the greater the perceived risk, the less likely it is that individuals will be willing to engage in online activities such as Internet banking. Hence it is suggested that:

H4: Perceived risk is inversely related to perceived usefulness.
H5: Perceived risk is inversely related to intention to use internet banking.

Fonchamnyo (2013) refers to perceived security as the “users’ perception of protection of their transaction details and personal data against unauthorized access”. Fonchamnyo (2013) further states that perceived security in the case of online banking is “the degree to which the customer perceives e-banking to be easily susceptible to fraud”. In online banking, security continues to be a concern for users and an impediment for potential users (Juwaheer, et al, 2012; Oni and Ayo, 2010; Tan and Teo 2000). Prior research has found that perceived security favorably influences individuals’ intention to use internet banking (Cheng, Lam, and Yeung, 2006; Fonchamnyo, 2013). Conversely, it is expected that concerns about security would hinder intentions to use internet banking. Hence it is suggested that:

H6: Perceived security is positively related to intention to use internet banking.

When customers consider changes in service delivery channels, switching cost may impact their decisions and actions (Lichtenstein, and Williamson, 2006). Switching cost is not limited to financial cost but also include procedural and relational switching cost (Burnham, Frels, and Mahajan, 2003). In this study the focus is on the consumers’ perceived switching cost associated with moving from other methods of doing their banking (in most cases, face-to-face banking) to internet banking. Prior research shows that individuals are less likely to participate in internet banking if they perceive the switching costs will be high (Devlin and Yeung, 2003; Lee, 2009). Hence it is suggested that:

H7: Switching costs are inversely related to intention to use internet banking.

Social influence derives from an individual’s perception of the social pressures placed on him/her to perform (or not perform) a particular behavior (Ajzen & Fishbein, 1980). The Theory of Reasoned Action suggests that while social influence may be a key determinant of behavioral intention this may differ across situations (Ajzen 1991). As such, while some researchers found social influence was positively related to behavioral intentions (Tan and Teo, 2000; Taylor and Todd, 1995), others did not identify a significant relationship (Mathieson, 1991). Nonetheless, given its importance in the early stages of the diffusion of an innovation through a social system (Rogers, 2003) it is reasonable to suggest that social influence may impact intention to use internet banking. Hence it is suggested that:

H8: Social influence is positively related to intention to use internet banking.

Research also suggests social influence may impact individuals’ perceptions of a technology through the information and cues that they receive from the social environment (Rogers, 2003). For example, Lopez-Nicolas et al. (2008) in a study of advanced mobile services found that interpersonal influence impacted perceptions of perceived usefulness of these services. Likewise, Venkatesh and Bala (2008) in a series of longitudinal studies of IS adoption across four organizations found that social influence in the form of subjective norms had a significant impact on perceived usefulness; however, the effect was moderated by experience and so diminished over time with increased experience. Thus in this study of potential users of internet banking it is expected that:
H9: Social influence is positively related to perceived ease of use.
H10: Social influence is positively related to perceived usefulness.
H11: Social influence is inversely related to perceived risk.
H12: Social influence is positively related to perceived security.
H13: Social influence is inversely related to switching costs.

These hypotheses are illustrated in Figure 1.

**Figure 1: Research Model**

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  H10
  /   \
H1    H9
  /     \
Perceived ease of use
  |       \
  |       H2
  |       \
H1

  H10
  /   \
H1    H9
  /     \
Perceived usefulness
  |       \
  |       H2
  |       \
H1

  H10
  /   \
H1    H9
  /     \
Perceived risk
  |       \
  |       H2
  |       \
H1

  H10
  /   \
H1    H9
  /     \
Perceived security
  |       \
  |       H2
  |       \
H1

  H10
  /   \
H1    H9
  /     \
Switching costs
  |       \
  |       H2
  |       \
H1

Social Influence

Use Intentions

H11

H12

H13
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**RESEARCH METHOD.**

The research model is evaluated using data from a field survey in Jamaica. Jamaica is a middle-income economy and the largest island in the English-speaking Caribbean. With a population of 2,909,714 people (2013 estimate) and Internet use penetration rate of 54.3%, based on 1,581 million Internet users in 2009 (CIA, 2013), the country is ranked 74th of 128 countries on the Network Readiness Index (The Global Information Technology Report, 2012). Internet banking was introduced in Jamaica late 2002 and by January 2005, three of the seven commercial banks offered retail internet banking, including free trial periods and fee options to encourage uptake. Until recent times, internet banking has been free of charges encouraging customers to switch from face-to-face and other transaction types that dominate the banking landscape of Jamaica to internet banking (Collinder, 2010; Harriott, 2011).

Data for this study was gathered using a self-administered survey questionnaire. The initial survey was reviewed by three academics and feedback used to make modifications to the research instrument. This was then pilot-tested with customers of one of the large commercial banks offering internet banking. 50 forms were received of which 40 were suitable for the pilot test. The results suggested adequate reliability and validity of the measurement model. The final survey was distributed to the general public. Data collection was concentrated in the metropolitan areas of Kingston and St Andrew where all seven banks have a presence. 178 completed responses were returned of which 92 were from persons who did not use internet banking, but indicated they would use it in the future, i.e. potential users.

All variables were measured using multi-item scales adapted from existing sources. *Perceived ease of use* was measured using 4-items and *perceived usefulness* using 6-items adapted from Davis (1989). Two items were used to assess *perceived risk* (Featherman and Pavlou, 2003) and three items each for *social influence* (Mathieson, 1991; Taylor and Todd, 1995), *perceived security* (Tan and Teo, 2000), *switching costs* (Gremler, 1995), and *use intention* (Taylor and Todd, 1995). Responses were captured on 9-point Likert scales anchored at either end with "Strongly agree" and "Strongly disagree".
FINDINGS

PLS-Graph 3.00 was used to assess the measurement model in terms of convergence (that is, individual item reliability, internal consistency, average variance extracted) and discriminant validity, as well as the structural model. The test of the measurement model suggested adequate levels for convergence and discriminant validity. Factor loadings ranged from 0.571 to 0.980. With one exception (for perceived security), all items exhibited high loadings, exceeding recommended threshold of 0.70 (Chin, 2010). Internal consistency ranged from 0.832 to 0.969 and average variance extracted ranged from 0.631 to 0.939, satisfying the criteria for convergence (Fornell and Larcker, 1981). Average variance extracted for each construct also exceeded the squared values of the construct inter-correlations satisfying the test for discriminant validity (Chin, 2010).

The model accounted for 0.329 of the variance observed for intention to use. Of the determinants of use intentions, perceived usefulness ($\beta=0.451$, $p \leq 0.01$) and perceived security ($\beta=0.182$, $p \leq 0.10$) were positively related to use intentions, while switching costs had an inverse relationship ($\beta=-0.146$, $p \leq 0.10$); hypotheses H3, H6 and H7 were supported. However, perceived ease of use, perceived risk and social influence were not significantly related to use intentions. Hypotheses H2, H5 and H8 were not supported.

The results further showed that social influence was related to all five independent variables - perceived usefulness ($\beta=0.124$, $p \leq 0.001$), perceived ease of use ($\beta=-0.378$, $p \leq 0.001$), perceived risk ($\beta=0.205$, $p \leq 0.01$), perceived security ($\beta=0.267$, $p \leq 0.01$), and switching costs ($\beta=-0.372$, $p \leq 0.10$). Hypotheses H9 to H13 were supported.

Finally, the model accounted for 0.257 of the variance observed for perceived usefulness. Perceived ease of use was significantly related to perceived usefulness, supporting hypothesis H1. However, perceived risk had no impact on perceived usefulness; hypothesis H4 was not supported.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Perceived ease of use $\rightarrow$ Perceived usefulness</td>
<td>0.451***</td>
</tr>
<tr>
<td>H2: Perceived ease of use $\rightarrow$ Use Intentions</td>
<td>-0.040</td>
</tr>
<tr>
<td>H3: Perceived usefulness $\rightarrow$ Use Intentions</td>
<td>0.201**</td>
</tr>
<tr>
<td>H4: Perceived Risk $\rightarrow$ Perceived usefulness</td>
<td>-0.088</td>
</tr>
<tr>
<td>H5: Perceived Risk $\rightarrow$ Use Intentions</td>
<td>0.014</td>
</tr>
<tr>
<td>H6: Perceived Security $\rightarrow$ Use Intentions</td>
<td>0.182*</td>
</tr>
<tr>
<td>H7: Perceived Switching Costs $\rightarrow$ Use Intentions</td>
<td>-0.146</td>
</tr>
<tr>
<td>H8: Social Influence $\rightarrow$ Use Intentions</td>
<td>0.342</td>
</tr>
<tr>
<td>H9: Social Influence $\rightarrow$ Perceived ease of use</td>
<td>0.378</td>
</tr>
<tr>
<td>H10: Social Influence $\rightarrow$ Perceived usefulness</td>
<td>0.124***</td>
</tr>
<tr>
<td>H11: Social Influence $\rightarrow$ Perceived Risk</td>
<td>0.205***</td>
</tr>
<tr>
<td>H12: Social Influence $\rightarrow$ Perceived Security</td>
<td>0.267**</td>
</tr>
<tr>
<td>H13: Social Influence $\rightarrow$ Perceived Switching Costs</td>
<td>-0.372*</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.257</td>
</tr>
<tr>
<td></td>
<td>Use Intentions</td>
</tr>
</tbody>
</table>

Key: *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.10$

Table 1: Model Results

DISCUSSION AND CONCLUSIONS

The focus of this research is on understanding factors that impact intention to use internet banking, with particular attention paid to factors that may hinder adoption of the technology as well as the role of social influence as an informational source for framing beliefs about the Internet banking. The study therefore examined the impact of a set of determinants (i.e. perceived usefulness, perceived ease of use, perceived risk, perceived security, switching costs, and social influence) on the intention of potential users to use Internet banking. The results (Table 1) showed
the determinants accounted for 0.329 of the variance observed for potential users. Although not reported in this study, the model was less effective in explaining the use intentions of potential users than for a holdout sample of current users (n=50, $R^2 = 0.690$), suggesting there are other factors that are significant for potential users.

The study showed that in addition to perceived usefulness, switching costs and concerns about security aspects of Internet banking may also impact uptake. The results further showed that switching costs was significant inhibitor of use intentions, signaling that the effort required to move from one mode of banking to another is a significant factor impacting adoption. This finding may also explain in part the broader observation that while many customers have signed up for internet banking, and there has been some increase in the number of transactions conducted via internet banking the majority are not doing their business using internet banking.

Prior research also suggests that perceived risk may have a significant impact on use intentions, but this appeared not to be so for this study. One possible reason may lay with the focus on potential adopters who were not opposed to internet banking. Among non-adopters, research suggests that while perceived risk may be a strong barrier for opponents to internet banking, its effect may lessen for those who are less resistant (Laukkanen, Sinkkonen and Laukkanen, 2008), which may have been the case for the current study.

Although perceived ease of use did not directly impact use intentions, its impact on use via perceived usefulness was significant, suggesting that concerns about the ease with which individuals can carry out their transactions using internet banking may lower their perceptions about the relative usefulness of internet banking, which impacted use intentions. Coupled with the direct impact of switching costs on intentions, the indirect effect of perceived ease of use as a deterrent may be an even greater concern in societies where people are used to doing their banking in a certain way (e.g. face-to-face), and may not transition readily from the incumbent system to the new system (Polites and Karahanna, 2012). Further research is needed to investigate this effect.

Prior research suggests that potential users in the early stages of diffusion of a technology may draw more on the experiences, evaluations and opinions of referent others (i.e. interpersonal channels) than their own knowledge of the innovation (Rogers, 2003). For potential adopters, social influence may therefore be critical at this stage of the innovation-decision process informing one’s beliefs and decisions about the innovation. The study showed that while social influence did not have a direct impact on use intentions, it had a significant impact on other factors impacting perceived usefulness and use intentions, that is perceived ease of use for perceived usefulness, and perceived usefulness, perceived security and switching costs in relation to use intentions. This is critically important as the study suggests potential inhibitors such as perceived security, ease of use and switching costs are being informed by others’ experiences and opinions. Further, the test of the research model with the holdout sample of users (n=50) showed that use intentions was strongly and directly influenced by social influence ($\beta$=0.368, $p\leq0.001$) while potential users are not. This suggests the importance of the ‘right voice’ to encourage uptake.

The purpose of this research was to uncover and better understand factors that impact the adoption and use of Internet banking in developing countries. For this study the focus was on Jamaica. Despite the importance of understanding technology adoption and use in these regions, with a few exceptions (Akhlaq and Ahmed, 2013; Jaruwachirathanakul and Fink, 2005; Walsham, and Sahay, 2006) little has been done in IS research or other developmental studies in this regard. It is therefore expected that this research will extend understanding of the role of social influence on key factors impacting internet banking.

Although this is an exploratory study, some limitations can be anticipated. For example, to minimize the potential for respondent bias, a cross-section section of the retail banking population was surveyed. However, the use of a survey may still be subject to respondent biases. Second, the main study is conducted in Jamaica where Internet banking though growing is still in its infancy; while, the context may reflect characteristics that are of typical of many middle-income developing economies, the results may not be representative of more developed high-income regions or of lower-income economies. Although these factors may limit the extent to which the results may apply elsewhere (even within Jamaica for a rural setting), the objective was to explaining the slow uptake of internet banking in a region, and not to assess generalisability. Further work is needed to determine if the findings apply elsewhere. Finally, the model explained 0.329 of the variance in use intentions which was significantly lower compared with users suggesting other factors are critical to uptake; further work is needed to identify these factors. For example, research suggests that factors such as trust in the technology and in the supplier (i.e. the bank) (Akhlaq and Ahmed, 2013) and perceived behavioral control regarding infrastructural and government support (Jaruwachirathanakul and Fink, 2005) may also be barriers to internet banking in developing countries.
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