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AN ANALYSIS OF MOBILE BANKING ADOPTION IN ZIMBABWE

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ABSTRACT

This paper seeks to explore Zimbabwean citizen’s perceptions towards mobile banking adoption using a combination of TRA, TPB model, and TAM plus an extension subjective norm. Trust, Socio Economic background and cost were also added as constructs. Literature study on mobile-commerce combined with questionnaire survey findings were used to determine the behaviours and perceptions of the citizens towards mobile banking adoption in Zimbabwe. The findings of this study revealed that Attitude towards Use (β= 0.657, p<0.01), Subjective Norm (β=0.641, p<0.01), Perceived Ease of Use (β= 0.774, p<0.01), Trust (β= 0.577, p<0.01), Self-Efficacy (β= 0.503, p<0.01) affected intention of mobile users to adopt mobile banking services in Zimbabwe. Socio Economic background (β= -0.21, p<0.01) and External Influence (β= -0.22, p<0.01) have no significance in the mobile banking context. The study recommends that mobile banking service providers (MBSPs) must increase awareness in the early adoption stages through media advertisements, social sites, promotions, posters on public transport and seminars, MBSPs must provide information and instructions of this technology in all languages spoken in Zimbabwe so as to reach all the citizens and lastly MBSPs should collaborate with Mobile service providers for better control Quality of Services (QoS) as well as enhance adopters’ accessibility.

KEYWORDS: Mobile-Commerce, Mobile Service, Mobile Banking, Zimbabwean Citizens

INTRODUCTION

The rapid proliferation of mobile technology throughout the world has made mobile phones increasingly available to everyone even those in the most remote parts of the world. The shift from contract lines to prepaid billing, rapid diffusion, increased convenience when compared to fixed telephone systems, affordable handsets from Asia among other reasons have contributed greatly to the spread of mobile telephony system in developing nations in general and Zimbabwe in particular. A lot of citizens in marginalized areas who lack proper
tap water, basic health and sanitary facilities and electricity indeed have got access to mobile technology.

This increase in the use of mobile technology coupled with the astronomic growth in the use of the internet has created a new platform for carrying out business known as mobile-commerce (m-commerce). Though still in its infancy stages in developing nations like Zimbabwe, m-commerce has registered great success as a convenient and cost effective way to transact in developed countries like Singapore and China. Mobile and wireless telephony and high speed data communications have tremendously enhanced the way business is conducted since the new millennium. The technology allows employees, partners, and customers to access corporate data from almost anywhere and anytime (Amoako-Gyampah, 2007). Mobile banking is an m-commerce application that enables bank transactions to be conducted via mobile devices, or more broadly – it is an application that facilitates financial transactions to be conducted via a mobile terminal (Drexelius & Herzig, 2001).

According to (Mohammadi & Jahanshahi, 2008), the increase of the flexibility and power of wireless deals provides proper opportunities for rising up services to customers. In fact, this could mean the real services providing in all times despite the person’s location. On the consumption side, global retail revenue from mobile devices is now expected to reach $119B by 2015, representing approximately 8% of the total e-commerce market (Chiu et al, 2012).

The following hypotheses were tested H1, Perceived usefulness has a positive effect on attitude towards use; H2, Perceived usefulness has a positive effect on Intention to use; H3, Perceived ease of use has a positive effect on attitude towards use; H4, Perceived ease of use has a positive effect on perceived usefulness; H5, Attitude toward use has a positive effect on intention to use; H6, Intention to Use has a positive effect on Actual Usage; H7, Trust has a positive effect on Perceived Usefulness, H8, Trust has a positive effect on Subjective norm; H9, Trust has a positive effect on Behavioral control; H10, External influence has a positive effect on Perceived ease of use; H11, External influence has a positive effect on Perceived usefulness; H12, External influence has a positive effect on Socio Economic Background; H13, External influence has a positive effect on subjective norm; H14, Socio Economic Background has a positive effect on Perceived ease of use; H15, Socio Economic Background has a positive effect on Perceived usefulness; H16, Socio Economic Background has a positive effect on External influence; H17, Socio Economic Background has a positive effect on Subjective norm; H18, Self-Efficacy has a positive effect on Behavioral Control; H19, Behavioral Control has a positive effect on Intention to Use; H20, Behavioral control has a
positive effect on Actual Use; H21, Subjective norm has a positive effect on Attitude toward Use and H22, Perceived Cost has direct effect on Intention to use.

Materials and Methods

Literature study on m-commerce, technology acceptance models and interviews combined with online survey findings were used to analyze the state of Mobile Banking and explore the perceptions of users towards this innovation in Zimbabwe. A combination of qualitative and quasi-quantitative deductive approach was used so as to get a greater degree of accuracy and validity in the results, thus strengthening the findings obtained from the study. Online questionnaires were distributed in order to widen the geographical representation. Respondents were recruited from discussion forum groups on the web as well as social network forums like as Facebook and Twitter. 140 users were asked to complete the online Questionnaires. The research model for this study was a combination of various models which include the TRA, TAM plus an extension subjective norm, and TPB model. Trust, Socio Economic background and Cost were also added as constructs to the research model. This enabled a more comprehensive manner to understand the acceptance behavior towards mobile banking in Zimbabwe.
Results

Fig 1: Results of the study

Discussion

Intention toward Mobile Banking Adoption

The intention to use Mobile Banking is jointly predicted by Attitude towards Use ($\beta=0.657$, $p<0.01$) Perceived Cost ($\beta=0.205$, $p<0.01$) Behavioral Control ($\beta=0.051$, $p<0.01$) and Perceived Usefulness ($\beta=0.315$, $p<0.01$). These variables when combined explain 56.4% of the variance on intention to use ($R^2=0.564$ Coefficient of determination). This is an indication of the good explanatory power of the model for intentions. This is in concurrence with previous studies (Buraghani, 2007) with $R^2=0.560$; (Puschel et al, 2010) with $R^2=0.684$ and but it is in divergence with (Aboelmaged, 2010) with $R^2=0.162$. Attitude towards use

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(β= 0.657) has a significant positive effect on intention to use Mobile Banking and thereby supporting Hypothesis 5. For individuals to adopt any innovation their intentions are driven by their attitudes. This would appear to support Khalifa & Lamayam (2003) contention that attitude has strong effect on intention. But this is inconsistent with the findings of Todd and Taylor (1995) and Davis et al. (1989), who found that there is no significant relation between attitude and intention.

The path between Perceived Cost and Intention was found to be significant (β= 0.205), thereby supporting Hypothesis 22. This finding are consistent with Cho et al (2007), Luarn & Lin (2005) and Wu & Wang (2005) who were of the notion that there is a significant relationship between Perceived Cost and Intention to use Mobile Banking. However, Yu (2009) findings show that perceived cost and Intention to use are not correlated. The relationship between Perceived Usefulness and Intention to use Mobile banking was found to be significant (β= 0.315), thereby supporting Hypothesis 2. This is consistent with finding of (Buraghani, 2007) and (Todd & Taylor, 1995), who both supported the notion that there is a significant relationship between Perceived Usefulness and Intention to Use Mobile Banking services. The path between Behavioral Control and Intention to adopt Mobile Banking was found to be significant though not to a very high extent (β= 0.051) thereby supporting Hypothesis 19. This is in concurrence with a study conducted by Aboelmaged (2010) and Todd & Taylor (1995). However it is inconsistent with Buraghani (2007).

**Attitude towards Use**

Attitude towards Use is predicted by Subjective Norm (β= 0.641, p<0.01), Perceived Usefulness (β= 0.363, p<0.01), Perceived Ease of Use (β= 0.148, p< 0.01) and this jointly explain 67.2% of the total variance. Subjective Norm is what people around an individual think in terms of adopting Mobile Banking and was found to be significant (β = 0.641), thereby supporting Hypothesis 21. According to the study, Subjective Norm has the strongest effect on Attitude to use mobile banking with a path coefficient of 0.641 thereby emphasizing the important role of other important persons to an individual in driving their attitude towards Mobile Banking adoption. This appears to be consistent with a study conducted by Puschel et al (2010). The path between Perceived ease of use and Attitude towards use was also found to be significant (β= 0.148), there by supporting Hypothesis 3. This is consistent with findings of Buraghani (2007) and Todd & Taylor (1995) who reported that there is significant relation between Perceived ease of use and Attitude towards Use.

The path between Perceived usefulness and Attitude towards use was also found to be significant (β= 0.363), thereby supporting Hypothesis 1. This again is consistent with
findings from Cho et al., (2007); Buraghani (2007); Islam et al. (2011) as well as Todd & Taylor (1995), who reported that there is significant relation between Perceived usefulness and Attitude towards use.

**Perceived Usefulness**

Perceived Usefulness is predicted by Perceived Ease of Use ($\beta = 0.774, p<0.01$), External Influence ($\beta = 0.341, p<0.01$) and Trust ($\beta = 0.577, p<0.01$) and jointly account for 56.5% of the total variance explained. The path between Perceived ease of use and Perceived usefulness was found to be significant ($\beta = 0.774$), there by supporting Hypothesis 4. This is consistent with finding of Todd & Taylor (1995) and Lee (2009). Perceived ease of use has the strongest effect on perceived usefulness as evidenced by the high coefficient of determination ($\beta = 0.774, p<0.01$). This probably explains the importance of the effect of one’s perception on how easy it is to transact using mobile their perception on Mobile Banking’s usefulness. The path between Trust and Perceived usefulness was found to be significant ($\beta = 0.205$), thereby supporting Hypothesis 7. This is consistent with finding of Arroyo-Cañada & Gil-Lafuente (2011) and Wu & Chen (2005), who reported that Trust affects how people perceive usefulness of a technological innovation.

The relationship between Socio–Economic Background and Perceived usefulness was found not to be significant ($\beta = -0.321, p<0.01$) thereby we reject Hypothesis 15. This explained the fact that where people come from and their background did not affect how they viewed new technological innovations in this case Mobile Banking. External Influence was also found to be a significant factor affecting Perceived usefulness with ($\beta = 0.341, p<0.01$) thereby supporting our Hypothesis 11. This is consistent with the findings of the research conducted by Lee (2009)

**Perceived Ease of Use**

The path between External Influence and Perceived ease of use was found to be significant ($\beta = 0.261, p<0.01$) thereby accepting Hypothesis 10. This explains 32.2% of the variance and the results thus support studies conducted by Arroyo-Cañada & Gil-Lafuente (2011). According to our model, we had indicated that Perceived ease of use was affected by one’s Socio-Economic Background. However, this relationship was found to be insignificant with ($\beta = -0.045, p<0.01$). We therefore reject Hypothesis 14.

**Behavioral Control**

Behavioral control is influenced by Self-Efficacy ($\beta = 0.503, p<0.01$) and Trust ($\beta = 0.374, p<0.01$). These variables jointly accounts for 45.6% of the total variance explained. Self-efficacy ($\beta = 0.503, p<0.01$) has significant effect on Behavioral control and thereby
supporting Hypothesis 18. Self-efficacy has the strongest effect on Behavioral control towards the use of Mobile Banking. This is in support to (Luarn & Lin, 2005); (Yu, 2009) and (Kelifa et al, 2003)’s contention that Self-efficacy has effect on Behavior towards use of a technology. Trust ($\beta= 0.374, p<0.01$) is the other factor that has a positive effect on Behavioral intention to adopt a technology. This therefore leads us to the acceptance of Hypothesis 9 and is supported with research by (Cho et al, 2007).

**Actual Use**

Actual use is predicted by Behavioral Control ($\beta= 0.131, p<0.01$) and Intention to use ($\beta= 0.36, p<0.01$). These variables when combined explain 48.7% of the variance on Actual use ($R^2 = 0.487$ Coefficient of determination). Intention to use ($\beta= 0.36$) has significant effect on Actual use of Mobile Banking and thereby supporting Hypothesis 6. In fact, Intention to use has the strongest effect on Actual use of Mobile Banking as evidenced by the path coefficient of 0.36. This shows that the higher the people who intended to use a new innovation the higher the chances of its actual use. These results are consistent with studies by Lee & Benbasat., 2003 and Karjaluoto et al. (2002). The path between Behavioral Control and Actual use was also found to be significant ($\beta= 0.131$), thereby supporting Hypothesis 20.

**Subjective Norm**

Subjective Norm is influenced by Socio Economic Background ($\beta= 0.331,p<0.01$), External Influence ($\beta= 0.243,p<0.01$) and Trust ($\beta= 0.19,p<0.01$) and this jointly explain 23.1% of the total variance. Socio Economic Background ($\beta= 0.331, p<0.01$) has significant effect on the Subjective Norm and thereby supporting Hypothesis 17. Socio Economic Background has the strongest effect on Subjective norm towards the use of Mobile Banking. In their study Gachter et al., (2004) concurred with these findings. External Influence ($\beta= 0.243, p<0.01$) is the other factor that has a positive effect on Subjective Norm towards adoption of Mobile Banking. This therefore leads us to the acceptance of Hypothesis 13. Trust ($\beta= 0.19, p<0.01$) also affects the Subjective norm positively thereby supporting Hypothesis 8. This is consistent with results from Chen and Barnes (2007); Holsapple & Sasidharan (2005); Goles et al. (2009) and Yang & Chang (2009).

**External Influence and Socio Economic Background**

According to our framework, we had stated that Socio Economic Background has got some effects on External Influence. However, the research conducted ($\beta= -0.213, p<0.01$)
lead to the rejection of Hypothesis 16. This is in support of studies by Gachter et al., (2004) who underscored that the socio-economic characteristics of the subject pool do not matter for contribution behavior. Since contributions are different, motivations to contribute may be different between subjects, but these motives are unrelated to the socio-economic characteristics of the participants. Furthermore, our model stated that there is a relationship between External Influence and Socio Economic Background. However this relationship which yielded ($\beta = -0.221, p<0.01$) was found to have a negative effect thereby leading to the rejection of Hypothesis 12.

CONCLUSION

The findings of this study revealed that perceived usefulness, perceived ease of use, trusty, Behavioral control, Self-efficacy, subjective norms, and external influence affected intention of mobile users to adopt mobile banking services in Zimbabwe. Meanwhile, the Socio-economic background was the only factor found to be insignificant in this study. Thus, this research has provided valuable knowledge and information to banks, service developers, and software engineers to enhance consumers’ intention to use mobile banking services. It has also provided meaningful insight to consumers as to the benefits of transacting via Mobile phones.

RECOMMENDATIONS

The study revealed that recognizing trust is a very important aspect to consider in Mobile Banking adoption. It is therefore very important for Mobile Banking service providers to implement a facilitating condition in order for trust to be built. To effectively attract customers to use Mobile Banking services, the service providers must provide sufficient insurance to clients that their money is safe and will be delivered in time without any glitches. Mobile banking service providers must increase awareness in the early adoption stages through media advertisements, flyers, social sites, promotions, banners, road show campaigns, posters on public transport and seminars. The use of these awareness tools alone does not bring adoption, citizens need to be trained and supplied with sufficient knowledge on how to use mobile banking technology. Mobile banking service providers must provide information and instructions of this technology in all languages spoken in Zimbabwe so as to reach all the citizens regardless of their mother language. Wide publicity underscoring the benefits and ease of use by demonstrating Mobile banking services should be provided. This could be implemented by providing good documentation and bank assistance. Regular
surveying of customers’ responses and opinions of the services should be conducted to ensure continuous improvement. Security information should be provided in non-technical terms, and be accompanied by standard security statements. perception of quality service will increase the bank’s image for good services, accuracy and effectiveness. Failure of execution not only causes dissatisfaction and uncertainty to the customer but also makes the whole Mobile Banking process more complex and less comprehensible.

Furthermore, Mobile Banking service providers should collaborate with Mobile service providers because this will enable Mobile Banking service providers to better control quality of services as well as enhance adopters’ accessibility. In addition, a high quality mobility infrastructure should be provided since it is one of the primary requirements for Mobile Banking. Support from the government and industry regulators should be lobbied so as to initiate suitable steps to implement legal and regulatory statutory for Mobile-commerce in general and Mobile banking in particular since currently none exist. In addition to lobbying the Zimbabwean government, banks should also proactively participate in improving Mobile services in order to increase Mobile banking awareness. For example, electronic transacting laws should be promoted by banks in order to reduce customers’ perceptions of risks. Mobile Banking Service providers should focus on people with high purchasing power as first priority and attempt to shift them on. This requires extensive analyses of their needs and expectations and the provision of customized services that are of value to them. Future research must seek to expand on the targeted respondents in order to improve representation, other factors affecting the adoption of Mobile banking services such as gender and age must be included in future investigations. It is suggested that future studies focus more on understanding why Socio Economic background and External Influence which are normally important in information technology adoption were not significant within the mobile banking context.

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