



Extending the Technology Acceptance Model to Mobile Banking Adoption in Rural Zimbabwe

Shallone K. Chitungo¹ & Simon Munongo²

¹Great Zimbabwe University, Faculty of Commerce, Department of Banking and Finance

²Great Zimbabwe University, Faculty of Commerce, Department of Economics

Corresponding author: Simon Munongo, Great Zimbabwe University, Faculty of Commerce, Department of Economics

Abstract

Improvements in wireless technologies and increased uptake of advanced mobile handsets have led to a growing trend in mobile banking activities on a global scale. This empirical study sought to investigate the applicability of the extension of the renowned framework of Technology Acceptance Model (TAM) in determining factors that influence unbanked rural communities Zimbabwe's intention to adopt mobile banking services. A self-administered questionnaire was developed and distributed in Zaka, Chiredzi, Gutu and Chivi rural districts. Out of the 400 questionnaires, only 275 useable questionnaires were returned, yielding a response rate of 69%. Results were subsequently analyzed by the SPSS package. The findings indicate that the extended TAM can predict consumer intention to use mobile banking. Specifically, perceived usefulness, perceived ease of use, relative advantages, personal innovativeness and social norms have significant effect on user's attitude thus influence the intention toward mobile banking, whilst perceived risks and costs deterred the adoption of the service. The results may provide further insights into mobile banking strategies for mobile network operators, banks and software engineers to design and implement mobile banking services to yield higher consumer acceptance amongst the unbanked rural communities in Zimbabwe.

Key words: Mobile Banking, unbanked, extended Technology Acceptance Model, Zimbabwe

Introduction

Access to finance especially by the poor and vulnerable groups usually residing in rural areas is an essential requisite for employment, economic growth and poverty alleviation. The spread of financial facilities in Zimbabwe overtime has however been uneven, with banks having focused mainly on urban clients, much

to the detriment of rural communities, such that as a result, the latter have been left unbanked overtime. The advancement of mobile technologies has seen even peripheral rural communities worldwide successfully embracing wireless connectivity technology (Puschel and Mazzon, 2010). Zimbabwe's rural areas are no exception to this phenomenon, yet they still have an unmatched low access to basic financial services.

The introduction of mobile banking services in Zimbabwe in late 2011 by mobile network operators (MNOs) such as Econet Wireless Zimbabwe (EcoCash) and Telecel Zimbabwe means that mobile banking is the panacea for the unbanked rural communities in the country to gain access to financial services, leveraging on the high mobile phone usage amongst the populace concerned. Suoranta and Mattila (2004) indicate that mobile banking is among the most recent financial channel today. Several authors have further identified the benefits of mobile banking in terms of ubiquity coverage, flexibility, interactivity, and with greater accessibility compared to conventional banking channels such as Automated Teller Machine (ATM), and non-mobile banking (Sulaiman, Jaafar and Mohezar, 2007; Turban, King and Lee, 2006; Laukkanen, 2007). Therefore, this research aimed to bridge the gap by extending the Technology Acceptance Model (TAM) originated by Davis (1989) to investigate the factors influencing mobile banking adoption in Zimbabwe's rural areas.

Literature Review

Mobile Banking

Mobile banking, also referred to as m-banking, is an application of mobile commerce that enables customers to bank virtually at any convenient time and place (Suoranta, 2003). It is also defined as the provision of banking and related financial services such as savings, funds transfer, and stock market transactions among others on mobile devices (Tiwari and Buse, 2007). Mobile banking systems offer a variety of financial functions, including micropayments to merchants, bill-payments to utilities, person to person (P2P) transfers, business to business (B2B) transfers, business to person (B2P) transfers and long-distance remittances. Currently, different institutional and business models deliver these

mobile banking systems. As Porteous (2006) notes, some mobile banking systems are offered entirely by banks, others entirely by telecommunications providers, and still others involve a partnership between a bank and a telecommunications provider.

In Zimbabwe, examples of mobile banking products launched to date include Kingdom Bank's Cellcard, Tetrad's e-Mali, Econet Wireless' EcoCash, CABS' Textacash offered through Telecel Zimbabwe, Interfin Bank's Cybercash and CBZ Bank's Mobile banking. CABS and Interfin Bank both operate on Telecel Zimbabwe's mobile transfer platform, whilst Econet is a sole service provider of the EcoCash mobile banking facility. Many authors acknowledge that m-banking has been taken up rapidly in many developing countries which have experienced a high penetration rate of mobile handsets in the market (Boadi *et al.*, 2007; UNCTAD, 2007; Donner, 2007; Wray, 2008; Cruz and Laukkanen, 2010).

Although mobile banking yields enormous benefits, numerous scholars found that mobile banking adoption globally still remains at infancy stage (Laukkanen, 2005; Luarn and Lin, 2005, and Donner and Tellez, 2008). Meanwhile, Kleijnen *et al.*, (2007) further indicated that the usage of mobile banking has yet to meet the industrial expectations. For example, Malaysia Communication and Multimedia Commission (MCMC) (2007) through the Hand Phone Survey reported that only 7 percent out of 33.5 percent of mobile users who are aware of mobile banking services registered with the banks for such purpose. As the dynamic growth of mobile penetration was mainly driven by developing countries (United Nations, 2009) thus, the findings from a developing country such as Zimbabwe are of interest.

Factors influencing adoption of mobile banking services

Adoption is the acceptance and continued use of a particular product, service or idea (Safeena, *et al.*, 2011). Sathye (1999) agrees with Rogers and Shoemaker (1971) in acknowledging that consumers go through a process of knowledge, persuasion, decision and confirmation before they are ready to adopt a product or

service. Therefore, adoption or rejection of an innovation begins when the consumer becomes aware of the product or service.

According to Davis (1989), the acceptance and rejection of technology can be predicted by using the Technology Acceptance Model (TAM), which demonstrates the relationship connecting belief, attitude and action purpose. The model was adopted from the Theory of Reasoned Action (TRA) which was developed by Ajzen and Fishbein (1980) to explain virtually any human behaviour, but it is very general. There is a common agreement amongst information systems researchers that the TAM is valid in predicting an individual's acceptance of new technologies (Doll, *et al.*, 1998; Chinn and Todd, 1995; Segar and Grover, 1993; Adams, *et al.*, 1999; Plauffe, Hulland and Vandenbosch, 2001; Legnis, Inghamb and Collerettec, 2003).

The original T.A.M by Davis (1989) consists of two constructs; perceived usefulness and perceived ease of use. Perceived usefulness (PU) refers to the degree to which a person believes that using a particular system would enhance their performance, whilst perceived ease of use (PEOU) is defined as the degree to which a person believes that using a particular system would be free of physical and mental effort (Davis, 1989). Later studies by Chung and Kwon (2009) demonstrate that the constructs of PU and PEOU are positively related to behavioural intention to adopt mobile banking. However, Mathieson (1991) argues that although extensively validated, it is insufficient to rely only on these two constructs of perceived usefulness (PU) and perceived ease of use (PEOU) in investigating user's technology acceptance.

Riquelme and Rios (2010) and various other authors suggest that there are other possible factors that might affect mobile banking adoption such as perceived risk or uncertainty (Chung and Kwon, 2009; Donner and Tellez, 2008; Luo *et al.*, 2010; Luakkanen, 2005), social norms (Pederson and Ling, 2002; Riquelme and Rios, 2010), financial cost (Yang, 2005), demographic factors (Amin, *et al.*, 2006; Laforet and Li, 2005; Lee and Lee, 2007; Polatoglu and Ekin, 2001). In view of

the different constructs being used in literature, this study will extend the TAM which had Perceived ease of use (PEOU) and perceived usefulness (PU) by including relative advantages (RA), perceived risk (PR), personal innovativeness (PI), social norms (SN) and perceived cost (PC).

Perceived Usefulness (PU)

Perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). That is, potential adopters assess the consequences of their adoption behaviour based on the ongoing desirability of usefulness derived from the innovation (Chau, 2004). In fact, information system adoption research suggests that a system that does not help people perform their jobs is not likely to be received favourably (Nysveen *et al.* 2005b). Perceived usefulness is also known as performance expectancy (Venkatesh *et al.*, 2003). Perceived usefulness is recognized as having a strong positive effect on the intention of adopters to use the innovation.

Perceived Ease of Use

Perceived ease of use is the degree to which a person believes that using a particular system would be free of effort (Dholakia and Dholakia, 2004). Other constructs that capture the notion of perceived ease of use, are complexity and effort expectancy (Rogers, 1995; Venkatesh, *et al.*, 2003). Perceived ease of use may contribute towards performance, and therefore, near-term perceived usefulness and the lack of it can cause frustration, and therefore, impair adoption of innovations (Davis, 1989; Taylor and Todd, 2001; Venkatesh, 1999; Venkatesh and Davis, 2000). The impact of perceived ease of use on a user's intention to adopt an innovation either directly or indirectly through perceived usefulness has been documented well in literature.

However, the role of PEOU in the TAM remains controversial. Mathwick (2001), Fang, *et al.*, (2005) allude that the nature of an innovation or a task or service related to it may influence its perceived ease of use. In the mobile banking setting, perceived ease of use represents the degree to which individuals

associate freedom of difficulty with the use of mobile technology and services in everyday usage (Knutsen, Constantio and Damsgaard, 2005). Moon and Kim (2001) coin that mobile banking services that are easy to use will be less threatening to individuals in that, they might find them less complex or tedious to use. For example, there is evidence in the media that using certain services on a mobile device can be quite tedious, especially when browsing Internet-like interfaces on mobile devices. Mobile telephones with relatively small screen sizes and associated miniaturized keypads can inhibit viewing of all information, and also lead to typing errors during transactions; thereby making the overall mobile banking usage experience may be adversely affected.

Social Norms (SN)

A social norm is defined as an individual's perception that most people who are important to them think they should or should not perform the behaviour in question (Ajzen and Fishbein, 1975). The social norm is determined by the total set of accessible normative beliefs concerning the expectations of important friends. Individuals often respond to social normative influences to establish a favourable image in a reference group. Benbasatt (2000) defines image as the degree to which use of innovation is perceived to enhance one's status in a social system. Pedersen and Ling (2002) emphasize that the construct of social influences cannot be ignored in any adoption model. Thus, it is not surprising that social norms have been widely validated in group-oriented I.T (Taylor and Todd, 1995), email acceptance (Gefen and Straub, 1997; Karahana and Limayem, 2000), internet banking (Chan and Lu, 2004) and mobile banking adoption (Riquelme and Rios, 2010; Schepers and Wetzels, 2007). Social influence seems to be more significant in the earlier rather than later phases of adoption and its effect decreases with sustained usage (Ajzen and Fishbein, 1975). Therefore, literature suggests that social norms have significant positive effect on mobile banking adoption.

Perceived Risk (PR)

Perceived risk is the uncertainty about the outcome of the use of the innovation (Gerrard and Cunningham, 2003). Benamati and Serva (2007) suggest that the adoption of electronic banking forces consumers to consider concerns about password integrity, privacy, data encryption, hacking, and the protection of personal information. Perceived risks of information loss during mobile banking transactions is also an important factor that customers will consider while accessing mobile phone based services (Laforet and Li, 2005; Luarn and Lin, 2005; Mallat 2007; Gu, et al., 2009). It is purported that perceived risk has a negative influence on mobile banking adoption.

Relative Advantages (RA)

Relative advantages are the identified merits of using a particular product or service. As compared to other banking channels, mobile banking offers convenient benefits in terms of mobility, which are not availed by traditional off-line banking and non-mobile internet banking (Anckar and D’Incau, 2002; Lee and Benbasat, 2003; Looney, Jessup and Valacich, 2004). It is postulated that there is a significant positive relationship between relative advantages and adoption of mobile banking technology.

Personal Innovativeness (PI)

Personal innovativeness is the innate willingness of an individual to try out and embrace new technologies and their related services for accomplishing specific goals (Rao and Toshani, 2007). Personal innovativeness represents a confluence of technology-related beliefs which jointly contribute to determining an individual’s pre-disposition to adopt mobile devices and related services. Therefore, given the same level of beliefs and perceptions about an innovation, individuals with higher personal innovativeness are more likely to develop positive attitudes towards adopting it than less innovative individuals (Agarwal and Prasad, 1998).

From prior researches (Agarwal and Prasad, 1998; Lockett and Littler, 1997; Hung, Ku and Chang, 2003), that it is concluded that personal innovativeness has a strongly positive influence on mobile banking adoption. The relationship implies that innovative users tend to accept new technology more positively. Literature has been validated in all the above studies; in that those users with high innovativeness have been found to be more likely to explore and adopt mobile banking services. Subsequently, this view justified the need to see if possibly there would be contrary findings when applying the antecedent of personal innovativeness to the adoption of m-banking services by Zimbabwean rural communities.

Costs (C)

Cost is defined as the extent to which a person believes that using mobile banking would cost money (Luarn and Lin 2005). The cost may include the transactional cost in the form of bank charges, mobile network charges for sending communication traffic (including SMS or data) and mobile device cost. Mallat (2007), and Cruz and Laukkanen (2010) are of the view that subscription and service fees for accessing mobile services such as banking, promotional offers, shopping have a significant influence on user acceptance, and as a result, it is concluded that cost has a negative effect on adoption of mobile banking services.

This particular study however focuses on the rural unbanked context, a population with low disposable income. According to Karnani (2009), people at the BOP have very low purchasing power and are price sensitive. According to Guesalaga and Marshall (2008), the consumption pattern of the BOP in developing countries concentrates mainly on basic needs such as food, housing and household goods; with less spending on information and communication technology (ICT). Hence, such a view provides a niche to be verified if indeed literature holds; that is whether indeed the perceived cost of mobile banking services is likely to result in rural communities shunning the adoption of mobile banking in Zimbabwe.

Hypotheses Development

This study has postulated to test the following hypotheses:

H₁ : Perceived Usefulness has a positive significant relationship towards mobile banking adoption.

H₂ : Perceived Ease of Use has a positive significant relationship towards mobile banking adoption.

H₃ : Social Norms have a positive significant relationship towards mobile banking adoption

H₄ : Perceived Risks have negative a significant relationship towards mobile banking adoption.

H₅ : Relative Advantages have positive significant relationship towards mobile banking adoption.

H₆ : Personal Innovativeness has positive significant relationship towards mobile banking adoption.

H₇ : Costs have significant negative relationship towards mobile banking adoption.

4.0 Methodology

In this section, sampling and data collection procedures are discussed, followed by variables operational measurement and statistical tests used to evaluate hypotheses.

4.1 Sampling and Data Collection

The objective of this study is to explore the influential factors which influence rural consumers' adoption of mobile banking in Zimbabwe. Target respondents of this study were adults who owned mobile telephone devices, with or without a bank account who resided in the rural communities of Zaka, Chiredzi, Gutu and Chivi in Masvingo Province. Paper -and-pencil survey method was used for data

collection. A sampling size of 400 questionnaires was equally distributed by using stratified random sampling in each of the four areas, resulting in 100 respondents per chosen stratum. Out of the 400 questionnaires that sent out, 275 were completed and returned, recorded a response rate of 69%. A pre-test was performed which involved 45 lecturers who are familiar with banking and finance together with information system areas to access survey's items sequences and contextual relevance for validity and reliability. Feedbacks were collected and solicited to improve the overall design and understanding of items in questionnaires.

4.2 Variable Measurement

4.2.1 Independent Variables

Independent variables in this study were accessed with items adapted from existing literature. There are seven independent variables used in this study, specifically, PEOU, PU, SN, PR, RA, PI and Costs. Each of these variables measured between three to six questions which tailored within mobile banking adoption context.

4.2.2 Dependent Variable

Behavioural intention (BI) to adopt mobile banking services by rural communities was the dependent variable.

4.3 Data Analysis

4.3.1 Profile of Respondents

The profile from surveyed respondents is shown in Appendix 1. The gender distribution of respondents is 48.4% percent for males and 51.6% for females. The breakdown of age groups is dominated by the group of 21-25 years which consists of 42.9 %. This is followed by those respondents aged 40 and above, which had 16.7%. The geographical dispersion of gender in Zimbabwean rural areas is in favour of women as most men work and live in urban areas. The majority of respondents, which is 91.3%, were educated, with the greatest proportion having completed secondary school, which is "O" Level.

All respondents were literate as those who had no formal education were able to read and write. In this research, most of the respondents own mobile telephone handsets (86.5 percent), save for a meagre 13.5%, evidencing a very high cell phone penetration rate in rural communities. Out of 238 respondents who owned cell phones, 79.4% had between 1 to over 3 years' usage experience of the mobile devices, with only 20.6% having had used the same over less than a year. The data also showed that among the respondents, 73.8% of them do not have access to formal banking/financial services, with only 26.2% owning bank accounts. Only 46.5% of all 275 respondents were aware of mobile banking services, however, a huge proportion (93%) within the same group had actually adopted the use of the services.

4.3.2 Correlation Analysis

The purpose of Pearson correlation analysis is to examine the bivariate relationships among variables. Tables 4.1 to 4.9 below present the Pearson correlation coefficient (r) among dependent variable and independent variables. The (r) is a measure of the strength of association between two variables. In this study, respective correlation coefficients were calculated for the dependent variable against all 7 independent variables, together with the pair of PEOU and PU. The level of significance was set at 1% for all correlation coefficient tests performed for this study.

Correlation of PEOU and PU in BI to Adopt Mobile Banking

Table 4.1 Correlation of PEOU and PU in BI to Adopt Mobile Banking

| | | If you are a current user of mobile banking, do you find it useful? (PU) | If you are a current user of mobile banking, is it easy to learn how to use the service?(PEOU) |
|---|---------------------|--|--|
| If you are a current user of mobile banking, do you find it useful? (PU) | Pearson Correlation | 1 | 0.370** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 128 | 128 |
| If you are a current user of mobile banking, is it easy to learn how to use the service? (PEOU) | Pearson Correlation | 0.370** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 128 | 128 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

Source: SPSS Output From Primary Data

Write up: $r(128) = 0.370$, $p < 0.01$, = Significant positive relationship.

Correlation of PU and BI to Adopt Mobile Banking

Table 4.2 Correlation of PU& BI to Adopt Mobile Banking

| | | Considering use of mobile banking? (BI) | Would you adopt mobile banking if it were useful to you? (PU) |
|---|---------------------|---|---|
| Considering use of mobile banking? (BI) | Pearson Correlation | 1 | 0.769** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 275 | 275 |
| Would you adopt mobile banking if it were useful to you? (PU) | Pearson Correlation | 0.769** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 275 | 275 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output From Primary Data

Write up: $r(128) = 0.769$, $p < 0.01$, = A fairly strong positive relationship.

Correlation of PEOU and BI to Adopt Mobile Banking

Table 4.3 Correlation of PEOU and BI to Adopt Mobile Banking

| | | Considering use of mobile banking? (BI) | Would you adopt mobile banking if it's easy to use? (PEOU) |
|--|---------------------|---|--|
| Considering use of mobile banking? (BI) | Pearson Correlation | 1 | 0.435** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 275 | 275 |
| Would you adopt mobile banking if it's easy to use? (PEOU) | Pearson Correlation | 0.435** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 116 | 116 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output From Primary Data

Write up: $r(275) = 0.435$, $p < 0.01$, = Positive relationship

Correlation of PR and BI to Adopt Mobile Banking

Table 4.4 Correlation of PR and BI to Adopt Mobile Banking

| | | Considering use of mobile banking? (BI) | Would you adopt if there were risks of loss involved? (PR) |
|--|---------------------|---|--|
| Considering use of mobile banking? (BI) | Pearson Correlation | 1 | -0.636** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 275 | 275 |
| Would you adopt if there were risks of loss involved? (PR) | Pearson Correlation | -0.636** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 275 | 275 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output From Primary Data

Write up: $r(275) = -0.636$, $p < 0.01$, = Strong negative relationship.

Correlation of SN and BI to Adopt Mobile Banking

Table 4.5 Correlation of SN and BI to Adopt Mobile Banking

| | | Considering use of mobile banking? (BI) | Would you use mobile banking because family and friends do so? (SN) |
|---|---------------------|---|---|
| Considering use of mobile banking? (BI) | Pearson Correlation | 1 | 0.714** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 275 | 275 |
| Would you use mobile banking because family and friends do so? (SN) | Pearson Correlation | 0.714** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 275 | 275 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output From Primary Data

Write up: $r(275) = 0.714$, $p < 0.01$, = Strong positive relationship.

Correlation of Costs and BI to Adopt Mobile Banking

Table 4.6 Correlation of Costs and Adoption of Mobile Banking

| | | Considering use of mobile banking? (BI) | If there were high charges levied, would you still use mobile banking services? (Costs) |
|---|---------------------|---|---|
| Considering use of mobile banking? (BI) | Pearson Correlation | 1 | -0.678** |
| | Sig. (2-tailed) | | 0.001 |
| | N | 275 | 275 |
| If there were high charges levied, would you still use mobile banking services? (Costs) | Pearson Correlation | -0.678** | 1 |
| | Sig. (2-tailed) | 0.001 | |
| | N | 275 | 275 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output From Primary Data

Write up: $r(275) = -0.678$, $p < 0.01$, = Strong negative relationship.

Correlation of PI and BI to Adopt Mobile Banking

Table 4.7 Correlation of PI and BI to Adopt Mobile Banking

| | | Considering use of mobile banking? (BI) | Are you quick to use new technologies when they are introduced? (PI) |
|--|---------------------|---|--|
| Considering use of mobile banking? (BI) | Pearson Correlation | 1 | 0.263** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 275 | 275 |
| Are you quick to use new technologies when they are introduced? (PI) | Pearson Correlation | 0.263** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 275 | 275 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output From Primary Data

Write up: $r(116) = 0.263$, $p < 0.01$, = Positive relationship.

Correlation of RA and Adoption of Mobile Banking

Table 4.8 Correlation of RA and BI to Adopt Mobile Banking

| | | Considering use of mobile banking? (BI) | Would you use mobile banking if there were benefits derived from using it? (RA) |
|---|---------------------|---|---|
| Considering use of mobile banking? (BI) | Pearson Correlation | 1 | 0.774** |
| | Sig. (2-tailed) | | 0.000 |
| | N | 275 | 275 |
| Would you use mobile banking if there were benefits derived from using it? (RA) | Pearson Correlation | 0.774** | 1 |
| | Sig. (2-tailed) | 0.000 | |
| | N | 275 | 275 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

Source: SPSS Output From Primary Data

Write up: $r(275) = 0.774$, $p < 0.01$, = Strong positive relationship.

4.3.3 Linear Regression Analysis

Linear regression analysis was carried out in order to have a model that can be used to predict the respondents' intention to adopt mobile banking services using the variables under study. The outcome of the procedure is presented below in Table 4.10.

Table 4.9 Model Summary

| Model Summary | | | | |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .845 ^a | .815 | .801 | .15568 |

Source: SPSS Output From Primary Data

Table 4.10 above shows that 81.5% of the variance in the dependent variable (BI) is accounted for by the identified independent variables. A regression analysis

predicting (BI) from identified independent variables was statistically significant. The resultant equation that predicted the adoption or (BI) of mobile banking a service is as follows:

$$(BI) = 0.091 (\text{constant}) + 0.337 (PU) + 0.155 (PEOU) - 0.177 (PR) + 0.204 (SN) - 0.146 (\text{Costs}) + 0.101 (PI) + 0.130 (RA)$$

5.1 Discussion and Summary of Findings

The study revealed that mobile banking is still a new phenomenon in Zimbabwean rural communities as evidenced by the low levels (43.3%) of current usage of the services. The low rate of adoption is due to the fact that m-banking technology is still a new phenomenon in Zimbabwe. The current users of the service emerged to be those aware and with either in-depth or basic knowledge of the same. A number of further interesting revelations were made. First, although quite a number of respondents (46.5%) were aware of mobile banking, not all had decided to adopt the service for various reasons, among them respondents' lack of spontaneity towards new technology.

Secondly, the research showed that a lot of people in rural communities had no knowledge at all about mobile banking services, as evidenced by 51.8% (128 respondents) citing lack of knowledge of the services. Furthermore, results showed that there were more people with cell phones (88.6%) than with bank accounts (26.2%). Therefore, this research exposed that traditional retail banks do not deliver services tailored to fit the currently unbanked populace, which has led to a gap in the market; which indeed is a niche market for m-banking service providers. The study revealed that currently, EcoCash is the sole provider of mobile banking services in rural communities.

5.1.1 Relationship between PU, PEOU, and BI

Our findings revealed that PU has indeed a positive relationship in influencing the respondents' intention to adopt mobile banking in rural Zimbabwe. The findings were consistent with studies from Chung and Kwon (2009), Lee et al. (2008) and Luarn and Lin (2005). This result implies that if mobile banking is useful and beneficial, users are more likely to adopt mobile banking services.

Eventually, mobile banking service providers might educate users the benefits of using mobile banking services through promotional mix such as personal selling, advertisements, sales promotions, and public relations. In addition, service providers may continue to innovate more useful features and services. For instance, Econet Wireless Zimbabwe launched “EcoCash” a mobile banking platform service that enable users to transact without internet access. Hence, by providing more useful service, thus users will be more attracted to adopt this service.

Similarly, PEOU was found to have positive correlation with a respondent’s behavioural intention to adopt mobile banking. This finding is consistent with the prior studies such as (Amin, et al., 2008), (Chung and Kwon, 2009), (Luarn and Lin (2005). The ability of the MNOs to should provide adequate information and clearer guidance on the use of mobile banking services encourages users to adopt the same. For example, the demonstration that the EcoCash facility displays on pamphlets, banners and physical assistance from its agents has prompted many people in the rural areas of Zimbabwe to adopt mobile banking. Once users have learnt the fundamental skills on how to operate mobile banking, a positive ease of use feeling is developed among users.

5.1.2 Social Norms

Social norms were found to have a strong positive correlation towards the intention to adopt the mobile banking service. The results were concurred with the findings from (Puschel and Mazzon, 2010), (Riquelme and Rios, 2010), (Schepers and Wetzels, 2007). A possible explanation to the results is that there is a very strong communal cohesion in rural communities, where individuals often respond to social normative influences to establish a favourable image in a reference group.

5.1.3 Relative Advantages

Relative advantages were found to be very significant in determining the intention to use mobile banking. The results were consistent with Pikkarainen et

al. (2004) and Venkatesh and Davis (2001). Practically, users are more likely to adopt mobile banking if they believe using mobile banking will gain more relative advantages as compared to other traditional banking channels such as ATM or non-mobile internet banking. Hence, MNOs and banks should emphasize the benefits that they can offer through this alternative banking channel. Therefore, MNOs and banks should emphasize the benefits in the aspects of cost savings, ubiquity, flexibility, and mobility by using mobile banking services. Specifically, competitive matrix should be used by banks to highlight the benefits over other banking channels. Therefore, the more relative advantage perceived by users, the higher the possibility that consumers will be attracted to adopt mobile banking.

5.1.4 Perceived Risk

Our findings show that there is a fairly strong negative correlation between perceived risks and mobile banking adoption. This implies that if individuals perceived higher risks and uncertainty such as issues of loss and theft of financial information due to system hacking, this would discourage adoption of mobile banking by the rural communities as they are risk averse. Significantly, these findings were found to be consistent with Luo et al. (2010); Mitchell (1999), Safeena, *et al.*, (2011); Benamati and Serva (2007); Laforet and Li, (2005); Luarn and Lin, (2005); Mallat, (2007) and Gu, et al., (2009) who all perceive risk is one of the critical factors to be focused while designing and developing a mobile banking service. Therefore, it is important for service providers to project higher security when providing mobile banking services in order to yield higher consumers' acceptance. In fact, banks and service providers should continuously innovate and offer better security and reliable applications to enhance users' confidence towards mobile banking services.

5.1.5 Personal Innovativeness

Numerous prior studies found that PI has a very strong positive influence on the acceptance on IT (Venkatesh and Davis, 2000). In this study, our findings

however revealed that PI has a fairly positive significant relationship towards the intention to adopt mobile banking services. The results were consistent with Lee et al.'s (2008) studies. PI has a positive influence on the adoption of mobile banking, and this outcome confirms prior conclusions by Chea, *et al.*, (2011); Joseph and Vyas (1984); Lu, Yao and Yu (2005); Agarwal and Prasad (1998); Lockett and Littler (1997); Hung, Ku and Chang (2003). This simply means that those respondents with high innovativeness are more likely to explore and adopt mobile banking services. Generally, high innovative individuals are usually the trendsetters they play an important role to influence others such as 'early majority' to adopt mobile banking services. However, it was discovered that the majority of individuals residing in Zimbabwean rural communities are not quick to adopt new technologies when they are introduced.

5.1.6 Costs

Our findings revealed that Costs have a significant negative effect on adoption of mobile banking services. This outcome upholds conclusions made previously by Ismail and Masinge (2011); Mallat (2007) Cruz and Laukkanen (2010). However it differs from results obtained from a study by Wu and Wang (2005) where perceived costs had minimal effect on adoption. The difference can be because Wu and Wang's respondents were in the high income range, with an average income level of US\$650, which is far above the income range obtained for this particular study, which was between less than US\$100 and US\$300.

5.2 Implications

In this section, first we articulate the implication of this study. Followed by the limitations and suggestions for further research and ended with the conclusion of the paper.

5.2.1 Theoretical Implications

From theoretical point of view, firstly this study successfully extended TAM in the context of mobile banking adoption with the inclusion of five new constructs namely, perceived risk, personal innovativeness, relative advantages, costs and social norms. Furthermore, from the findings of this research, it is concluded

that the TAM is useful, although limited with the need for extension in predicting adoption of technology by research respondents. Its two facets of PEOU and PU were found valid in explaining respondents' adoption of mobile banking, but were not the only factors influencing adoption. This finding is consistent with earlier findings with respect to the adoption of various new technology by Segar and Grove (1993); Chinn and Todd (1995); Doll, et al., (1998); Adams, et al., (1999); Plouffe, Hulland and Vandenbosch (2001); Legnis, Inghamb and Colletterec (2003). The extended model of TAM therefore provides clearer understanding of the factors influencing mobile banking adoption in Zimbabwe. Secondly, the findings significantly contribute to the existing mobile banking literature.

5.2.2 Management Implications

With the massive investment and efforts contributed in developing the mobile banking facilities, the varieties of convenient functions invented by mobile technology has greatly encouraged mobile users to engage in mobile banking services. After reviewing the findings of this study, there are several important implications suggested for banks, service developers and software engineers in order to provide better strategic insight to design and implement mobile banking services that yield higher consumer acceptance in Zimbabwe.

- Building customer awareness and informing the public on use of M-banking modes is required. There should be rigorous marketing campaigns by mobile banking service providers; banks and MNOs alike, especially targeting the rural communities.
- In order to enhance customers' PEOU in mobile banking, Service providers must, therefore, be willing to engage in massive civic education to ensure unproblematic usage and secure good patronage.
- In order to increase the adoption rate, service providers should focus on current non-users with mobile handset usage experience. This would help service providers to cover the majority of non-user customers who have experience using mobile phones.

- Service providers should introduce local languages on the mobile banking application rather than just English and in order to cater for illiterate, people there should be voice-based service support.
- There should be increased collaboration between banks and MNOs in the provision of m-banking services to the rural communities. This will effectively reduce costs of providing the mobile banking services because partnerships would mean shared costs of operation, which will ultimately reduce the costs incurred by users, which currently is quite high.

5.3 Limitations and Suggestions for Further Research

There are several limitations evidenced in this study. These limitations should be considered for future research and improvement. Firstly, the empirical evidence of this study is collected within a few rural communities in Zimbabwe and the results may not be generalized and inapplicable to other nationalities. Since the adoption and usage of mobile technology are highly varies across countries with different adoption levels and perceptions (Ackerman and Tellis, 2001), (Young and Jolly, 2009). Hence, researchers may want to further research on multi-nationalities through expanding geographical areas to gain better generalizations in future studies.

Secondly, the measures of constructs are collected at the same point of time in this study. Therefore, these individuals' perceptions and intention to use mobile banking may change over time as an unremitting process due to greater experience and advancement of mobile technologies for the time being. As a result, it is recommended to conduct a longitudinal research to examine the mobile banking adoption at multiple points of time during decision adoption process.

Thirdly other constructs such as demographics could be added to the study in order to discover their impact on behavioural intention to adopt mobile banking services. Another study could be undertaken using the same constructs employed in this study, but with a shift on focus to the urban areas in Zimbabwe. Lastly, a study that employs a completely different model such as the Theory of Reasoned

Action (TRA) could be undertaken to verify if results from using the TRA match those obtained by employing the TAM. Finally, the statistical analysis could be extended to consider some of the more complex relationships emerging from the TAM rather than to be limited to the analysis employed in this particular study.

5.4 Conclusion

Mobile banking is indeed a very powerful tool to deliver the much needed financial services to the unbanked masses in the rural areas as service providers can leverage on the high mobile penetration in the rural communities for rapid financial inclusion of the unbanked Zimbabwean rural communities. Thus, this research has provided valuable knowledge and information to banks, MNOs, service developers, and software engineers to enhance consumers' intention to use mobile banking services in future.

References

1. Ackerman, D and. Tellis, . Can culture affect prices? A cross-cultural study of shopping and retail prices, *Journal of Retailing*, vol. 77, pp. 57-82, 2001.
2. Agarwal, A. (2010). Financial deepening, financial inclusion: Challenges and opportunities. 23rd Skoch Summit.
3. Agarwal, R. and Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, vol. 9, no. 2, pp. 204-215.
4. Ajzen, I. and Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. NJ: Prentice- Hall.
5. Amin, H., et al. (2008). The adoption of mobile banking in Malaysia: The case of Bank Islam Malaysia Berhad (BIMB). *International Journal of Business and Society*, vol. 9, no. 2, pp. 45-53.
6. Amin, H., Hamid, M. R. A., Lada, S. and Z. Anis, The adoption of mobile banking in Malaysia: The case of Bank Islam Malaysia Berhad (BIMB), *International Journal of Business and Society*, vol. 9, no. 2, pp. 45-53, 2008.
7. Anckar, B. and D'Incau, D. (2002). Value creation in mobile commerce: Findings from a consumer survey. *Journal of Information Technology Theory and Application*, vol. 4, pp. 43-64.
8. Benamati, B. and Serva, A. (2007). Trust and distrust in online banking: Their role in developing countries. *Information Technology for Development*, vol. 13, no. 2, pp. 161-175.

9. Boadi, R.A., Boateng, R., Hinson, R. and Opoku, R.A. (2007). Preliminary insights into m-commerce adoption in Ghana. *Information Development*, 23(4), pp. 253-265.
10. Chung, N. and Kwon, S. J. (2009). The effects of customers' mobile experience and technical support on the intention to use mobile banking. *Cyber Psychology and Behavior*, vol. 12, no. 5, pp. 539-543.
11. Cruz, P., Neto, L. B. F., Munoz-Gallego, P. and Laukkanen, T. (2010). Mobile banking rollout in emerging markets: Evidence from Brazil, *International Journal of Bank Marketing*, vol. 28, no. 5, pp. 342-371.
12. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, vol. 13, no. 3, pp. 319-340.
13. Davis, L. D., Bagozzi, R. P. and Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003.
14. Donner, J. (2007). M-banking and m-payment services in the developing world: Complements or substitutes for trust and social capital. Annual Meeting of the International Communication Association San Francisco. California, Microsoft Research India.
15. Donner, J. and Tellez, C. A. (2008). Mobile banking and economic development: Linking adoption impact and use. *Asian Journal of Communication*, vol. 18, no. 4, pp. 318-332.
16. Fishbein, M. and Ajzen, I. (1975). Belief, attitude, intention and behaviour: An introduction to theory and research. Addison-Wesley.
17. Gerrard, P. and Cunningham, J. (2003). The diffusion of internet banking among Singapore consumers. *International Journal of Bank Marketing*, vol. 21, no. 1, pp. 16-28.
18. Gu, J. C., Lee, S. C. and Suh, Y. H. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems with Applications*, 36, 11605-11616.
19. Hung, S. Y., Ku, C. Y. and Chang, C. M. (2003). Critical factors of WAP services adoption: An empirical study. *Electronic Commerce Research & Applications*, vol. 2, no. 1, pp. 42-60.
20. Joseph, B. and Vyas, S. J. (1984). Concurrent validity of a measure of innovative cognitive style. *Journal of the Academy of Marketing Science*, vol. 12, no. 1, pp. 159-175.
21. Karahana, E. and Limayem, M. (2000). E-mail and v-mail usage: Generalizing across technologies. *Journal of Organizational Computing and Electronic Commerce*, vol. 10, no. 1, pp. 49-66.
22. Kleijnen, M., Wetzels, M. and de Ruyter, K. (2004). Consumer acceptance of wireless finance. *Journal of Financial Services Marketing*, vol. 8, no. 3, pp. 206-217.
23. Knutsen, L., Constantio, D. and Damsgaard, J. (2005). Acceptance and perceptions of advanced mobile services: Alterations during a field study. In *Proceedings international Conference on Mobile Business*, Sydney, Australia, pp.326-331.
24. Laforet, S. and Li, X. (2005). Consumers' attitudes towards online and mobile banking in China. *International Journal of Bank Marketing*, vol. 23, no. 5, pp. 362-380.

25. Laukkanen T. and Kiviniemi, V. (2010). The role of information in mobile banking resistance. *International Journal of Bank Marketing*, vol. 28, no. 5, pp. 372-388.
26. Laukkanen, T. (2007). Internet vs. mobile banking comparing customer value perceptions. *Business Process Management Journal*, vol. 13, no. 6, pp. 788-797.
27. Laukkanen, T. and J. Lauronen (2005). Consumer value creation in mobile banking services. *International Journal of mobile Communications* 3(4): 325-338.
28. Lee, G. and Lin, H. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail and Distribution Management* vol. 33, no. 2, pp. 161-176, 2005.
29. Lee, H., et al. (2003). The growth of broadband and electronic commerce in South Korea: Contributing Factors. *The Information Society, An International Journal* 19(1): 81- 93.
30. Lee, K.S. and Lee, H.S. (2007). Factors influencing the adoption behaviour of mobile banking: A South Korean perspective. *Journal of Internet Banking and Commerce*, 12(2), 1-9.
31. Lee, Y. and Benbasat, I. (2003). Interface design for mobile commerce. *Communications of the ACM*, vol. 46, pp. 49-52.
32. Lee, Y. K., Park, J. H. and Chung, N. (2008). An exploratory study of factors affecting usage intention toward mobile banking: A unified perspective using structural equation modelling. *Society for Marketing Advances Proceedings*.
33. Lee, Y., Kozar, K. A. and Larsen, K. R. T. (2003). The technology acceptance model: Past, present, and future. *Communications of the Association for Information Systems*, vol. 12, pp. 752-780.
34. Legris, P., Inghamb, J. and Collerettec, P. (2003). Why do people use information technology: A critical review of the technology acceptance model. *Information and Management*, 40(3), 191-201.
35. Li, W. and McQueen, R. (2008). Barriers to mobile commerce adoption: an analysis framework for a country-level perspective. *International Journal of Mobile Communications* 6(2).
36. Littler, D. and Melanthiou, D. (2006). Consumer perceptions of risk and uncertainty and the implications for behaviour towards innovative retail services: The case of internet banking. *Journal of Retailing and Consumer Services*, 13(6), pp. 431-443.
37. Lockett, A. and Littler, D. (1997). The adoption of direct banking services. *Journal of Marketing Management*, vol. 13, pp. 791-811.
38. Looney, C. A., Jessup, L. M. and Valacich, J. S. (2004). Emerging business models for mobile brokerage services. *Communications of the ACM*, vol. 46, pp. 71-77.
39. Lu, J., Yao, J. E. and Yu, C. S. (2005). Personal innovativeness, social influences and adoption of wireless internet services via mobile technology. *Journal of Strategic Information Systems*, vol. 14, pp. 245-268.

40. Luarn, P. and Lin, H. H. (2005). Towards an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, 21, 873-891.
41. Luo, X. et al. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. *Decision Support Systems*, vol. 49, no. 2, pp. 222-234.
42. Malaysia Communication and Multimedia Commission (MCMC). (2007).
43. Mallat, N. (2007). Exploring consumer adoption of mobile payments: A qualitative study. *The Journal of Strategic Information Systems* 16(4): 412-432.
44. Mallat, N. (2010). Exploring consumer adoption of mobile payments: A quantitative study. Helsinki School of Economics, Finland. *Sprouts Working Papers on Information Systems*, ISSN 1535-6078.
45. Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behaviour. *Information System Research*, vol. 84, no. 1, pp. 123-136.
46. Mathwick, C. (2001). The Effect of dynamic retail experiences on experiential perceptions of value: An internet and catalogue comparison. *Journal of Retailing*, vol. 78, no. 1, pp. 51-60.
47. Mitchell, V. W. (1999). Consumer perceived risk: Conceptualizations and models. *European Journal of Marketing*, vol. 33, nos. 1/2, pp. 163-195.
48. Nysveen, H., Pedersen, P.E. and Thornbjornsen, H. (2005b). Intentions to use mobile services: Antecedents and cross-service comparisons. *Journal of academy of marketing Services*, 33(3), pp.330-346.
49. Pedersen, P. and Ling, R. (2002). Modifying adoption research for mobile internet service adoption: Cross-disciplinary interactions. *Proceedings of the 36th Hawaii International Conference on System Sciences*, Big Island, HI, January 6-9.
50. Pikkaranen, T., Pikkaranen, K., Karjaluoto, H. and Pahnla, S. (2004). Consumer acceptance of on-line banking: An extension of the technology acceptance model. *Internet Research*, 14(3), pp. 224-235.
51. Plouffe, C.R., Hulland, J.S. and Vandebosch, M.(2001). Richnes versus parsimony in modelling technology adoption decisions: Understanding merchant adoption and smart card-based payment system. *Information Systems Research*, 12(2), 208-222.
52. Polatoglu, V. N. Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of Internet banking services. *International Journal of Bank Marketing*, vol. 19, no. 4, pp. 156-165.
53. Porteous, D. (2006). *The enabling environment for mobile banking in Africa*. London: DFID.
54. Porteous, D. (2006). *The enabling environment for mobile banking in Africa*. Bankable Frontiers Associates, Boston, USA.

55. Porteous, D. (2007). Just how transformational is m-banking? http://www.finmarktrust.org.za/accessfrontier/Documents/transformational_mbanking.pdf
56. Prahalad, C.K. and Hart, S. (2002). The fortune at the bottom of the pyramid. *Strategy and Business*, Issue 26.
57. Puschel, J. and Mazzon, J. A. (2010). Mobile banking: Proposition of an integrated adoption intention framework. *International Journal of Bank Marketing*, vol. 28, no. 5, pp. 389-409.
58. Puschel, J. and Mazzon, J. A. (2010). Mobile banking: Proposition of an integrated adoption intention framework. *International Journal of Bank Marketing*, vol. 28, no. 5, pp. 389-409.
59. Riquelme, H. E. and Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *The International Journal of Bank Marketing*, vol. 28, no. 5, pp. 328-341.
60. Rogers, E. M. (1983). *Diffusion of innovations*. 3rd ed. New York: The Free Press A Division of Macmillan Publishing Co., Inc.
61. Rogers, E. M. (1995). *Diffusion of innovations*. 4th ed. New York: Free Press.
62. Rogers, E. M. (2003). *Diffusion of innovation*. 5th ed. New York: Simon & Schuster, Inc.
63. Schepers, J. and Wetzels, M. (2007). A meta-analysis of the technology acceptance model: Investigating subjective norm and moderation effects. *Information and Management*, vol. 44, no. 1, pp. 90-103.
64. Sulaiman, A., Jaafar, N. I. and Mohezar, S. (2007). An overview of mobile banking adoption among the urban community. *International Journal of Mobile Communications*, vol. 5, no. 2, pp. 157-168.
65. Suoranta, M. (2003). Thesis: Adoption of mobile banking in Finland. Ph.D. Jyväskylä University Printing House, Jyväskylä and ER-paino, Lievestuore.
66. Tiwari, R. and Buse, S. (2007). *The mobile commerce prospects: A strategic analysis of opportunities in the banking sector*. Hamburg, Germany: Hamburg University Press.
67. Turban, E., King, D. and Lee, J. (2006). *Electronic commerce 2006: A managerial perspective*. Pearson Education, New Jersey: USA.
68. United Nations Conference on Trade and Development. (2009). [Online]. Available from: http://www.unctad.org/en/docs/ier2009_en.pdf. [Accessed 27 February 2012]
69. Venkatesh, V. and Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, vol. 46, no. 2, pp. 186-204.
70. Venkatesh, V. and Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behaviour. *MIS Quarterly*, vol. 24, no. 1, pp. 115-139.
71. Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.

72. Yang, K. and Jolly, L. D. The effects of consumer perceived value and subjective norm on mobile data service adoption between American and Korean consumers, *Journal of Retailing and Consumer Services*, vol. 16, pp. 502-508, 2009.

Appendix 1: Profile of Respondents : SPSS Output from Raw Data

| | | Gender | | | |
|--|-------------------------------|--------|-----------------|--------|-----------------|
| | | Male | | Female | |
| | | Count | % of respondent | Count | % of respondent |
| Respondent's Age (years) | 18-20 years | 19 | 6.9% | 16 | 5.8% |
| | 21-25 years | 58 | 21.1% | 60 | 21.8% |
| | 26-30 years | 1 | .4% | 16 | 5.8% |
| | 31-35 years | 24 | 8.7% | 17 | 6.2% |
| | 36-40 years | 7 | 2.5% | 11 | 4.0% |
| | 40+ years | 24 | 8.7% | 22 | 8.0% |
| Education level | No Formal Education | 13 | 4.7% | 11 | 4.0% |
| | Primary School Education(Gr7) | 18 | 6.5% | 32 | 11.6% |
| | Secondary School ("O" Level) | 76 | 27.6% | 94 | 34.2% |
| | High School ("A" Level) | 4 | 1.5% | 1 | .4% |
| If you have no formal schooling, are you able to read and write? | Yes | 13 | 4.7% | 11 | 4.0% |
| | No | 0 | .0% | 0 | .0% |
| What is your income range per month? | < USD 100 | 86 | 31.3% | 93 | 33.8% |
| | USD 100-150 | 47 | 17.1% | 44 | 16.0% |
| | USD 151-300 | 0 | .0% | 5 | 1.8% |
| Do you own a cellphone? | Yes | 105 | 38.2% | 133 | 48.4% |
| | No | 28 | 10.2% | 9 | 3.3% |
| Length of use of | <1 Year | 16 | 5.8% | 33 | 12.0% |

| | | | | | |
|----------------------------------|----------------|-----|-------|-----|-------|
| cellphone | 1-3 Years | 50 | 18.2% | 24 | 8.7% |
| | Over 3 years | 39 | 14.2% | 76 | 27.6% |
| | Not Applicable | 28 | 10.2% | 9 | 3.3% |
| Do you own a bank account? | Yes | 33 | 12.0% | 39 | 14.2% |
| | No | 100 | 36.4% | 103 | 37.5% |
| Are you aware of mobile banking? | Yes | 61 | 22.2% | 67 | 24.4% |
| | No | 72 | 26.2% | 75 | 27.3% |
| Current user of mobile banking? | Yes | 59 | 21.5% | 60 | 21.8% |
| | No | 74 | 26.9% | 82 | 29.8% |