



## **A STUDY OF MOBILE BANKING USAGE IN ZIMBABWE**

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### **Keywords**

Adoption, e-banking, financial inclusion, Mobile banking, mobile technology, Money Transfer Technology, Technology Acceptance Model.

### **Abstract**

The purpose of the research study was to evaluate the factors that contribute to the acceptance of the mobile banking technology in Zimbabwe. In the paper, a mixed research methodology was applied although it was more quantitative than qualitative. A mixed research methodology uses both the quantitative and the qualitative approach. According to Guilford (2013), quantitative results refers to those outcomes that can be measured, quantified or counted and can be given a numerical value. Whereas, qualitative results are descriptive in nature and they answer how and why a certain phenomenon is happening. The study target population was made up of the Masvingo province residents who are in the informal sector. The size of the sample was 700 residents from the entire province. A self-administered questionnaire was created and given to respondents and interviews were conducted. Using the primary collection technique, 627 out of 700 distributed questionnaires, were fruitfully completed were appropriate for scrutiny as they were fully completed, resulting in an 89.57% response rate. The outcomes from the questionnaire that focused only on those who have already adopted mobile banking were examined using multiple regression analysis. It was discovered that among the variables of the Technology Acceptance Model, perceived risk which is the assumed jeopardy of using mobile banking negatively affects potential users from adopting mobile banking services. On the other hand, awareness was discovered to be an important factor towards the adoption of the technology and it is still a continuous process taking and still needs more efforts so as to make almost everyone fully aware of the technology. Demographic variables like gender, age, income and educational level were also discovered to be major factors that funded to the adoption of the mobile banking technology in Zimbabwe. An interview was used also that attempted to investigate in-depth the reasons why the adoption of mobile banking is taking long in other places.

## **Introduction**

Mobile banking is a novel technology that aims at accelerating the financial inclusion goal which is a target for many developing nations. According to Sohail and Sahin (2012), mobile banking is the provision of financial and banking services facilitated by a mobile telecommunication device. Mobile banking is carried out in many ways so users have a wide variety of choice on which mobile banking platform to use. Mobile banking enables users to perform a variety of banking activities such as paying bills, transferring funds, requesting bank balances, pay insurances and performing other financial activities remotely.

Mobile banking strives to improve the lives of those who are included and those who are excluded from banking services (Faye and Triki (2013). This modern technology has allowed for flexibility in the way bank and users operate. Mobile banking enabled users to transact remotely at any place. This means they can now transact at the comfort of their homes, offices and anywhere they are. Bankers are no longer restricted to visit the banking premises if they need to access banking services (Mago and Chotokwindo, 2014). Mobile banking users can remotely access their bank accounts, manage their investment portfolio, check transactional history and account balances, transfer funds, pay bills and others (Durkin et al. 2003). Business on its own has changed due to the mobile technology and has changed how goods are bought and sold (Suoranta and Matilla, 2003). Customers can now buy a variety of products online and as well pay for services online. Many activities that were restricted to banking premises can now be conducted out of the banking halls.

Online banking speaks of whichever banking services which is steered over the internet commonly by visiting a banks' website under a private profile. On the other hand, mobile banking services allows its users to conduct several of the same services such as online banking using a mobile phone network without using the internet. In this paper, the scholar is going to refer to mobile banking which also includes internet banking. According to Chikoko and Mangwendeza (2015), mobile banking is an inexpensive financial services provision channel, to both the financial institution and the client. This is as opposed to traditional banking services like In-branch services, Real Time Gross Settlement (RTGS) and Automated Teller Machines (ATM). Types of mobile banking platforms include SMS banking, mobile application banking, internet banking and the list goes on.

SMS mobile banking can be accessed using any type of mobile phone as long as there is a mobile telephone network available. It does not require complicated software's or complicated information communication technology devices. On the other hand, internet banking requires a mobile phone that can support the banking applications which in most cases is a smart phone. Internet banking requires an internet connection for it to be used and can be done using any smart gadget like a computer, laptop,

smart watch, smartphone and other smart devices. Internet banking is a facility that is delivered by financial institutions and banks to permit users to conduct a wide variety of financial services remotely using a mobile device through application software's created for the purpose (Klein and Mayer, 2011). In this study, both types of mobile banking services which include both SMS and internet banking will be considered.

This modern technology is also being used as a way to curb the transmission of the deadly corona virus (COVID-19). Curbing covid-19 was made possible because movements of people are now restricted and people are no longer advised to queue in the banking premises. Barnes and Corbitt (2003) are of the view that mobile banking was brought to life as an effort to cut down costs associated with banking. These cost that were lessened applied to both the banks and its customers. Costs are minimized in many ways since bankers are no longer forced to travel to the banks to conduct transactions, less paperwork is needed since paper receipt are being substituted by text messages (SMS) and customers performs online transactions. Pollution was also minimized through the introduction of mobile banking, papers were substituted by online documents. (Burgess and Pande, 2005; Dupas, Karlan, Robinson, and Ubfal, 2016) all share the view that despite all the benefits of banking, there is still a huge number of people who are still unbanked. Mobile banking is the solution to assist and include the unbanked population so that they will benefit from the banking services. This technology has a huge potential of changing the lives of people even those at the bottom of the pyramid. People who are considered to be at the bottom of the pyramid include the poor, the unemployed and the rural people. For the majority to use the technology, the technology has to be well understood by everyone who has the potential of using it. Mattila (2003) states that the adoption of mobile banking is still very slow and annoying. The slow adoption rate of mobile banking is as a result of lacking awareness and knowledge on mobile banking.

This paper aims to investigate the driving factors towards the adoption of Mobile Banking by the majority of the population in Zimbabwe. This study will answer the question about how relevant factors affecting the acceptance and adoption of mobile financial services in Zimbabwe. This question will bring to the surface how the Technology Acceptance Model (TAM) factors like awareness, perceived risk, perceived ease of use, perceived usefulness, compatibility, resistance to change, attitude, intention, self-efficacy and perceived image. TAM is a theory in Information Systems that represents the way consumers begin to accept and adopt a technology (Fathema, Shannon and Ross, 2015). Hence, the main contributor towards the acceptance of mobile banking will be exposed. The study is of significance especially to the policy makers as it will provide them with enough information which will help them make informed decisions. Policy makers will use results from this work to make informed decisions since they will be equipped with more data.

This research study will be based on the Technology Acceptance Model (TAM). A questionnaire will be distributed to the Masvingo province residents both the urban and the rural. Both who adopted mobile banking and those who haven't yet adopted will be interviewed. Quantitative data will be used in scenarios where the researcher wants to quantify the problem for example when the researcher wants to find out which factor contributes more to the uptake of mobile banking (Ahrens and Khalifa, 2013). They added that qualitative data will be used on issues that cannot be measured but need reasoning. Interviews will be used to gather qualitative data. On the other

hand, quantitative data will be gathered by using the questionnaire. Surveys were used to reduce bias, take guessing out of the equation and discover undoubtable knowledge about a phenomenon (Johnson and Onwuegbuzie, 2004).

Zimbabwe is categorized as a third world country sited in the Southern region of Africa, which has a population of about 13 million individuals. More than half of the country's population is located in the remote rural areas. According to Mbengo and Phiri (2015), the adoption of mobile banking was slow and annoying in Zimbabwe among the rural folks. On the other hand, a statement released by the RBZ Monetary Policy Statement (2020) states that a volume of 98% of national payments were mobile payments. This research study will find out the current state of mobile banking in Zimbabwe. There is great need to encourage people to use their mobile devices for banking purposes. This will cut costs associated with banking and include those who are financially excluded in banking. Conversely with the undesirable rate of mobile banking adoption in Zimbabwe. Therefore it is of great importance to investigate the barriers on the usage of mobile banking. The broad theme of this paper is to explore the barriers and surface out reasons on users' attitudes toward the acceptance and adoption of mobile banking in most remote parts of Zimbabwe. This is of significance to developing nations especially those in Africa where a huge number of people are unbanked, that is people who do not have bank accounts.

Additionally, this paper seeks to explore the barriers and challenges towards the adoption of mobile banking in Zimbabwe. Factors such as security, perceived image, usability and others will be taken into account. A survey will be used for data collection and structural equations modeling will be applied to test the model of the research.

The study outcomes exposed that among the variables of the Technology Acceptance Model, perceived risk negatively affects potential users from adopting mobile banking services. On the other hand, awareness was discovered to be an important factor towards the adoption of the technology and it is still a continuous process taking and still needs more efforts so as to make almost everyone fully aware of the technology. Demographic variables like gender, age, income and educational level were also discovered to be major factors that funded to the adoption of the mobile banking technology in Zimbabwe.

There are some studies conducted by numerous authors on the topic of mobile banking. For example, Mutua (2014) conducted a study that aimed at investigating the factors affecting the mobile banking adoption in Kenya. The research outcome depicted that the adoption rate of the technology was below the targeted population.

Park, Snell and Chung (2011), conducted a study which examined the key factors which impact the acceptance of mobile banking among the existing consumers of internet banking services bearing in mind income, race, age and gender as demographic factors. This study was carried out in Singapore. The results from their paper depicted that gender, age, income, perceived risk and convenience had an influence on mobile banking adoption.

Sohail and Sahin (2012), conducted a research study that investigated into factors accountable to the prevention of the mobile banking adoption among scholars in

Taiwan. The study outcome depicted that gender, age and the cost of connecting to the internet were decelerating the consumption of mobile banking services among students in Taiwan.

Previous papers focused much on aspects that impact the acceptance of mobile banking by clients in established nations where social background intensified on outmoded approaches which are not associated to technological matters and also have a habit of overlooking certain significant components like gender and perceived cost which are pertinent in Zimbabwe. Even though substantial studies are increasing in emerging markets it is also useful to re-evaluate the performance of Extended Technological Acceptance Model (ETAM) in confirming influences that fund to the acceptance of the mobile banking technology in relation to Zimbabwean setting. Hence, this research study is undertaken to consider both traditional and technological elements in the Extended Technological Acceptance Model and demography in relation to Zimbabwean banking.

### **1.0 Background of the study**

The rapid developments in ICT have brought about innovations in the whole wide world. This brought about the speedy spread of mobile devices that has resulted to the birth of mobile banking in the world. As a result, Information Communication Technology (ICT) through the technology of mobile banking has contributed very much to the rise of financial inclusion to those who were excluded and disadvantaged in both developing and developed nations (Demirguc-Kunt, Klapper, Singer, Ansar, & Hess, 2018). According to Kopala (2010), financial inclusion signifies the availability of financial services such as transfers, credit savings, transactions, remittance services, payments and insurance to the disadvantaged at affordable costs.

The environment of the business is becoming more vibrant and it is going through rapid changes caused by innovations and new technologies. The birth of mobile banking and virtual money has brought new opportunities and challenges for individuals and businesses (Abdinoor and Mbamba, 2017). Mobile banking is a modern technology that allows customers to interact with their banks remotely using mobile devices which include mobile phones, tablets, computers and others. This technology can be viewed as a new channel of banking. Its infrastructure is supported by mobile or virtual money, which therefore means there is no mobile banking without virtual or mobile money. Virtual money is a form of a digital currency and do not have a physical form. It is also well known for its mobility and flexibility that makes it more attractive. This technology has enhanced the lives of many people. It also included many people especially the rural population who were once excluded in banking services. Those people who were once excluded can now use this modern technology for their advantage. According to (Mbengo and Phiri, 20115), mobile banking has the potential of improving financial inclusion.

Technology has brought about the opportunity to avoid people queuing in banks (Laukkanen, 2006). Due to the continuous inventions in technology experienced in recent years, banking become mobile and meant that more virtual money circulated in the economy. Individuals can now use their mobile phones as their wallets. Hence, people do not need to handle money in their pockets since it can get torn or can get easily misplaced. The adoption of mobile phones increased at a fast rate and Zimbabwe has witnessed the birth of mobile banking.

## 2.0 Banking in Zimbabwe

In Zimbabwe, the history of banks and financial institutions dates back to the colonial era and the government of Zimbabwe continued using the banks Tafirenyika (2013). Banks ensure the mobilization of surplus money in the economy and also govern its circulation in the economy so as to promote economic growth. Munyoro and Munyoro (2017) defined banks as monetary institutions that channel money from people who have surplus to people who want to borrow it at an interest. Additionally, banks facilitate the transfer of funds from one individual to another. They facilitate the transferring of funds at a cost. According to Smith (2006), traditionally all the banking services were carried out only at a physical branch ('bricks and motor') which has changed today because of technology.

### 2.1 How traditional banks work

If a user wants to send money to someone in a different location, the sender is forced or restricted to deposit the money at the banking premises. On the other hand, the receiver is forced to withdraw the money at the banking premises. This means that users are forced to travel to the physical location of banks if they intend to transfer or receive cash. This pose a huge challenge especially to those located at remote areas where there are no banking premises nearby.

Traditional banks also need to employ more human capital (bank tellers and security guards) who are needed to facilitate the transfer of funds. For a person to have or have access to a bank account, one goes through a tiresome registration process. A lot of documents and paper work are required in the process of account creation. For example, for one to open a POSB account, that person is supposed to provide the following as according to [www.posb.co.zw](http://www.posb.co.zw) :

- Pay initial deposit,
- Original Identification Card (National ID, Driver's License or valid passport)
- A certified copy of the ID
- Proof of Residence in your name and that is a challenge especially for those who reside in rented apartments.

People in rural areas are the majority in Zimbabwe and it is difficult for them to have bank accounts since they are located a distant away from the physical location of their banks (Munyoro and Matinde, 2016). Back in the year 2012, out of the population of about 13 million people only 800 000 had bank accounts, this means that the majority had no access to bank accounts (Kabeza, 2012). Moreover, money sent between individuals using banks take a long time to reflect in the receivers account.

### 2.2 Mobile Banking

In mobile banking, the mobile phone acts as a mobile wallet and customers perform transfers, do payments and check their salary and account balance wherever they are at any given time (Anurag, Tyagi and Raddi, 2009). Ngaruiya, Bosire and Kamau (2014) are of the view that mobile banking intensifies the speed and efficiency of how financial transactions happen. Kufandirimba et al. (2013) added that mobile banking provides a saving platform for especially those located at areas where there are no banks. Mobile banking can be simply integrated to other banking channels like and Point of Sale (POS) and Automated Teller Machine (ATM) machines to

accommodate users' service monetary value (Davies, 2013). As a result, the mobile banking platform has provided a simple unsophisticated banking value for money and greater customer service. According to Mutua (2015), mobile banking offers a range of benefits to both banks and its customers. The concept of mobile banking eliminates limitations caused by geography as a result bringing convenience to its customers. To the bank, mobile banking diminishes operating costs (Chogi, 2006).

### **2.3 Significance of influential factors that fund to the adoption of mobile banking**

With the efforts of increasing mobile banking service adoption, the valuation of the factors that fund to the adoption of mobile banking needs to be a mandatory requirement in Zimbabwe. The slow adoption rate of the adoption of mobile banking services may make observable patterns of loss to the future investments in banks (Brown, Zaheeda, Douglas, and Stroebel, 2012). As a result, this generates the requisite of several models such as the Technology Acceptance Model's (TAM) and demographic variables in assisting the financial institutions in defining the probable factors that can influence users in using mobile banking.

### **2.4 Factors funding to the adoption of mobile banking services.**

#### **Convenience (Perceived Usefulness and Perceived ease of use)**

According to Lin (2011), convenience is associated to perceived usefulness and perceived ease of use. Perceived ease of use is defined as the extent to which an individual believes that by using a specific technology is free of effort. It is an individual's valuation grounded on the belief that using a particular technology would be free of both physical effort and mental effort in steering day-to-day transactions using a mobile handheld device in this case. As a result, it is vital to note that users are prepared to adopt a new technology if they accept as true that the technology is easy to learn and use. Another cause that was recognized as a drawback to the acceptance of mobile banking in the Zimbabwe in previous studies was consumer's perception of seeing new technology as a difficult thing to use (Chitungo and Munongo, 2013). Additionally, according to Herstatt (2006), perceived ease of use supports towards performance and its absence causes frustration among partakers towards the service. Herstatt then commended for the necessity of educating the users on the system functionality so as to convince them.

Conversely, according to Lin (2011), perceived usefulness is the magnitude to which an individual believes that using a specific technology would improve one's job performance. That point is whereby a person ruminates that using a particular technology or system will improve his or her job performance. According to Koenig-Lewis, Palmer, and Moll (2010), it also submits that using laptops, computers and other information technology devices in the company can improve the user's yield, improve job performance and increase job efficacy. In the Zimbabwean banking sector, using the mobile banking technology can improve the user's time in executing transactions meanwhile traditional banking practices consume more time. Herstatt (2006) proposes that, a technology that does not help people to execute their jobs is not expected to be accepted positively. Hence, an individual can only adopt a service that is extremely advantageous as well as which delivers superior benefits. For that reason, convenience can be considered to be one of the causes why people are not using mobile banking systems in Zimbabwean.

## **Awareness**

According to Davies (2013) awareness is the magnitude of information that a person poses about a particular technology or system. Awareness is also deliberated as an important factor that contributes to people's adoption of mobile banking. Koenig-Lewis, Palmer, and Moll (2010), are of the view that failure to address consumers' concerns regarding to mobile banking results in potential users being not induced with the system. Some past researches also revealed that less awareness of internet banking and other automated services such as SMS banking services functioned as a key factor that caused potential users not to adopt these services (Lin, 2011 and Korir, 2012). According to Davies (2013), this result wastage of many financial institutions investments towards the system. As a result, awareness can be one of the explanations why people are unwilling to adopt the mobile banking technology in Zimbabwe. Therefore, the scholar found it feasible to determine the influence of awareness on the adoption of mobile banking services in Zimbabwe.

## **Perceived ease of use**

This refers to the degree that an individual believes that adopting a novel technology will give an end result in a smaller amount effort required to execute a certain task. Perceived ease of use directly have an impact on perceived usefulness because if the results of a technology are less effort applied to perform a task, finally that technology will be considered useful.

Other papers deliver findings that support the responsibility of ease of use in promoting the adoption of mobile banking (Ammar & Ahmed, 2016; Baptista & Oliveira, 2015; Mago & Chitokwindo, 2014; Mtambalika et al., 2016; Shrivastava, 2010).

## **Research methodology**

### **3.0 Introduction**

In this section, the researcher aims to give a detailed description of how the research study was carried out. Research methodology is better known as the discipline of analyzing how a research is carried out and it is a scientific way for answering research problems. Furthermore, the procedures and methods used for conducting the research study are discussed. This chapter comprises of the research design, research tools, data analysis techniques presentation and data gathering methods. Moreover this section outlines the populace of interest, sample size, reliability and validity of the used model. In short, in this chapter the researcher will explain the practical steps taken in order to carry out the study and the research questions will be answered.

### **3.1 Research Design**

According to McCombes (2021), a research design is a strategy for selecting research subjects so as to bring together information. Mashayamombe (2017) added that it is the overall approach that researchers apply to fit in the different study modules in a logical and comprehensible manner thereby guaranteeing an effective addressing of the research problem. This paper aims to explore the adoption rate of mobile banking to those in the informal sector in Zimbabwe.

A descriptive research makes use of a set of scientific techniques and methods for data collection structures used to define, identify and determine the current state of the population targeted (Durrheim, 2004). In this paper, a descriptive research will be



utilized. It will be used in the form of a case study. A descriptive case study targets to analyze the series of interpersonal events after a certain time period has lapsed (Cherry, 2021).

There are numerous approaches that can be adopted by researchers when carrying out an empirical data collection. This rests on the research question characters. That is the degree that the investigator have control over the events. A research study can be either a survey, an experiment, history, case study or archival analysis (Yin, 1994).

<b>Strategy</b>	<b>Form of research question</b>	<b>Requires control over behavioral events</b>	<b>Focuses on contemporary events</b>
<b>Survey</b>	How, why	YES	YES
<b>Experiment</b>	Who, what, where, how many, how much	NO	YES
<b>History</b>	Who, what, where, how many, how much	NO	YES/NO
<b>Case study</b>	How, why	NO	NO
<b>Archival analysis</b>	How, why	NO	YES

*Table 1: Relevant Situations for different research strategies Source: Yin, 1996, p.6*

### 3.2 Target Population

Green and Carmone, (2011) defined the research population as the sum of all objects, subjects and members that share mutual features and characteristics relative to the study to which sample findings can be generalized. In short, population is every potential individual who is pertinent to a research study. Wilkinson and Birmingham, (2012) further defined a population as a complete set of groups where a sample is taken. In this paper, the population consisted of those who are in the informal sector both rural and urban settlers in Masvingo province. Those who have already adopted mobile banking and those who are yet to adopt the technology were targeted as long as they were not formally employed. Only those above the age of 18 were interviewed. The population of people in Masvingo province was estimated to be around 1 887 054 by the year 2022 (Zimbabwe National Statistics Agency, 2020).

Age	Bikita	Chiredzi	Chivi	Gutu	Masvingo	Mwenezi	Zaka	Masvingo Urban	Chiredzi Urban	Total
0-4	29 171	68 814	30 824	33 838	40 387	43 884	31 166	17 231	5 860	301 174
5-9	29 318	65 673	31 606	34 763	39 593	42 903	31 658	13 580	4 534	293 627
10-14	26 475	53 265	28 227	32 705	34 077	35 457	28 363	11 454	3 589	253 613
15-19	21 356	39 994	22 422	25 665	28 075	25 301	21 875	14 219	4 315	203 223
20-24	12 367	30 584	13 496	15 807	19 007	17 245	12 843	15 392	4 595	141 336
25-29	9 938	27 726	11 017	12 213	15 877	14 336	10 258	13 049	4 507	118 921
30-34	9 645	25 263	10 230	11 789	15 033	12 721	9 935	10 727	3 838	109 181
35-39	9 041	23 293	9 326	11 146	13 340	11 916	9 142	8 427	2 983	98 615
40-44	8 194	18 022	8 383	10 006	11 532	9 385	7 975	7 280	2 379	83 156
45-49	6 451	12 887	6 141	8 629	9 476	6 697	6 232	5 248	1 569	63 329
50-54	4 986	10 372	5 014	6 614	6 857	5 693	5 284	2 465	835	48 122
55-59	4 686	7 617	4 698	6 109	6 223	4 464	4 722	1 739	532	40 790
60-64	4 446	6 810	4 597	5 897	5 402	4 129	4 588	1 096	351	37 316
65-69	3 846	4 421	4 287	5 734	4 398	3 288	3 611	800	264	30 648
70-74	2 683	3 281	3 014	4 035	3 465	2 313	2 739	475	115	22 120
75-79	2 248	2 133	2 321	3 025	2 263	1 591	2 092	365	81	16 120
80 +	3 417	3 263	3 918	4 391	3 878	2 645	3 672	481	96	25 763
<b>Total</b>	<b>188 268</b>	<b>403 418</b>	<b>199 521</b>	<b>232 366</b>	<b>258 884</b>	<b>243 969</b>	<b>196 156</b>	<b>124 028</b>	<b>40 443</b>	<b>1 887 054</b>

Table 2: Total Population by Age and District, 2022, Masvingo Province.

### 3.3 Research Instruments

According to Bradley and Stewart (2012), a research instrument is a tool used for collecting data and measuring it. In this paper, the researcher used a questionnaire and as well steered face to face interviews as tools for data collection. These activities were carried between November 2021 and March 2022. The respondents were the Masvingo province residence. This facilitated the researcher to evaluate the perceptions of people towards mobile banking.

### 3.4 Questionnaires

A questionnaire is a document which contains a sequence of questions designed with the intention of collection data (Bradley and Stewart, 2012). Hence, it is a document that prompts the respondents to answer to a set of structured questions in a prearranged order. In this paper, the researcher used a well sort and straight forward questionnaire that was easy for respondents to interpret and complete.

Punch (2013) is of the view that the information quality is to a larger extent determined by the data instrument’s quality. For that reason, the questionnaire used which comprised of closed ended questions which means the respondent could only choose from the available options.

The questionnaire was meant only for those who use mobile banking. The questions in the questionnaire gave the investigator a good understanding on the subject matter. It made use of a 7-point likert scale ranging from 1 (“Strongly agree”), 2 (“Agree”), 3 (“Somewhat agree”), 4 (“Neutral”), 5 (“Somewhat disagree”), 6 (“Disagree”) and 7 (“Strongly disagree”). This gave the investigator a perfect understanding of the influences leading to the adoption of mobile banking in Zimbabwe. Finally, this last section questioned the respondents about their views and opinions on how best the technology of mobile banking can be employed and upgraded so as to improve its adoption rate. This task was carried out with the aim of developing study recommendations.

The questionnaires were distributed to residents at the shopping centers and some were distributed via e-mail. The respondents were requested to return the completed

questionnaires back to the interviewer. As a result, this saved time for the researcher. The researcher made more use of questionnaires since they are cheaper and faster to implement as compared to interviews. Additionally, the questionnaire made responses stress-free when comparing them and putting them into numerical form. On the other hand, questionnaires do not permit explanations, responses that required justifications and clarity were not achieved. So, interviews were carried out so as to overcome this questionnaire short coming.

**The Likert Scale**

According to Kahn and Cannell (2014) a likert scale is a strategy used for measuring or ranging responses given by respondents on qualitative data that is used for data analysis and it enables easy interpretation of data. In this work, a likert scale was used to permit respondents to choose the most fitting response for each question asked on the questionnaires, (Gilgal, Bux and Cul, 2011).

Scale	Range	Response	Vertical Interpretation
1	6.22 – 7.00	Strongly agree	Very high
2	5.35 – 6.21	Agree	High
3	4.48 – 5.34	Somewhat agree	Slightly high
4	3.61 – 4.47	Neutral	Not sure but agreeing
5	2.74 – 3.60	Somewhat disagree	Slightly low
6	1.87 – 2.73	Disagree	Low
7	1.00 – 1.86	Strongly disagree	Very low

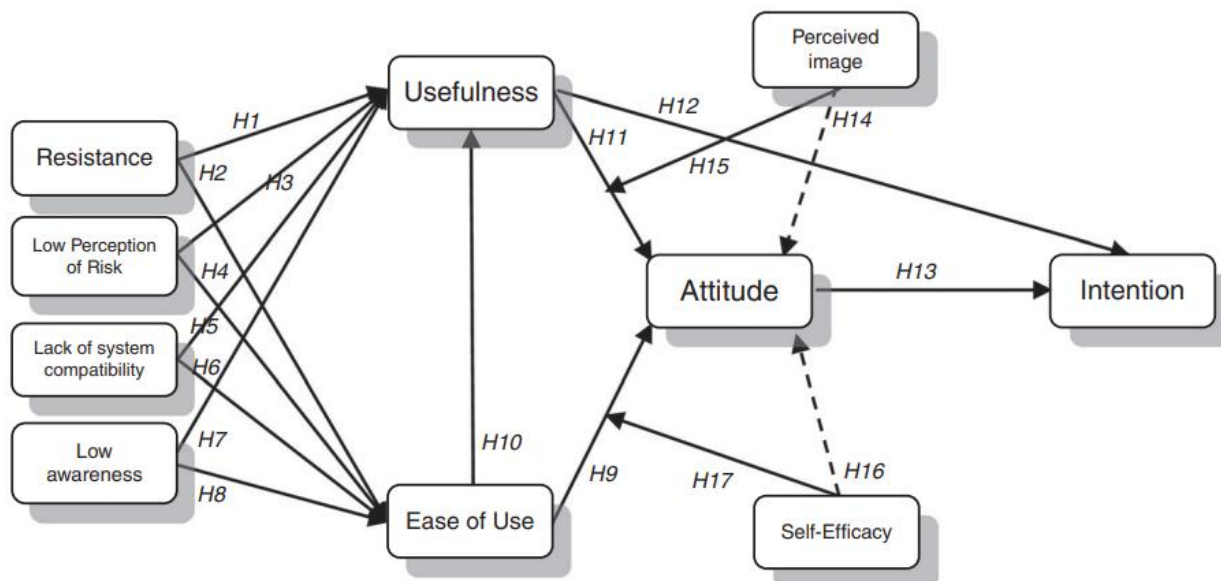
*Table 3*

**DATA PRESENTATION, ANALYSIS AND DISCUSSION**

**4.0 Introduction**

In this section, findings from the study will be interpreted, discussed and compared with the results from previous related studies. Frequency tables were used in presenting, taking to mean and analyzing the results from the study centering on the data acquired from the interviews and questionnaires.

**4.1 Research Model**



Research model adopted from: (Mohammadi, H 2014:733)

### 4.2 Path coefficient

As displayed in the table below, considering the factors impelling perceived ease of use, compatibility ( $y = 0.80$  where  $p < 0.001$ ) revealed the highest influence, and perceived awareness ( $y = 0.32$  where  $p < 0.001$ ) and perception of risk ( $y = 0.47$  where  $p < 0.001$ ) presented significant paths, on the other hand, resistance ( $y = -0.54$  where  $p < 0.001$ ) had a substantial negative path considering the factors swaying perceived usefulness, awareness ( $y = 0.46$  where  $p < 0.01$ ), compatibility ( $y = 0.80$  where  $p < 0.001$ ), and perception of risk ( $y = 0.38$  where  $p < 0.001$ ) had, respectively, significant positive paths. On the other hand, resistance ( $y = -0.53$  where  $p < 0.01$ ) presented a substantial negative impact. Perceived ease of use ( $\beta = 0.64$  where  $p < 0.001$ ) and perceived usefulness ( $\beta = 0.65$  where  $p < 0.001$ ) all had a substantial positive paths toward attitude, and perceived usefulness ( $\beta = 0.80$  where  $p < 0.001$ ) revealed a significant positive influence on the intention to carry on. In addition, perceived ease of use ( $\beta = 0.80$  where  $p < 0.001$ ) had a substantial influence on perceived usefulness. Lastly, perceived image ( $y = 0.47$  where  $p < 0.001$ ) presented significant influence, but self-efficacy ( $y = 0.18$ ) possessed no significant path towards the users' attitudes. Attitude ( $\beta = 0.78$  where  $p < 0.001$ ) also seemed to possess a significant positive path toward intention to remain. As a result, all paths excluding H16 are supported

Question	Path	Path coefficient	Is it supported?
Hypothesis 1	Resistance→ease of use	-0.54***	Yes
Hypothesis 2	Resistance→usefulness	-0.53***	Yes
Hypothesis 3	Perceived risk→ease of use	0.47***	Yes
Hypothesis 4	Perceived risk→usefulness	0.43***	Yes
Hypothesis 5	Compatibility→ease of use	0.80***	Yes
Hypothesis 6	Compatibility→usefulness	0.80***	Yes
Hypothesis 7	Awareness→ease of use	0.32**	Yes

Hypothesis 8	Awareness→usefulness	0.46***	Yes
Hypothesis 9	Ease of use→attitude	0.64***	Yes
Hypothesis 10	Ease of use→usefulness	0.80***	Yes
Hypothesis 11	Usefulness→attitude	0.65***	Yes
Hypothesis 12	Usefulness→intention	0.80***	Yes
Hypothesis 13	Attitude→intention	0.78***	Yes
Hypothesis 14	Perceived image→attitude	0.47***	Yes
Hypothesis 16	Self-efficacy→attitude	0.18	No

Note: \*\*, \*\*\*Significant at 0.01 and 0.001, respectively

Table 4: Path coefficient

### 4.3 Path analysis

According to Mohammadi (2015), path analysis is an instrumental modeling methodology of exploring the relationships within a defined network. Chen et al., (2011) states that path analysis is commonly on the judgment about the entire model that may be acceptable, unacceptable, or needs to be adjusted.

Mohammadi (2015) added that as depicted in the figure below, the path ease of use-usefulness-attitude-intention was verified using path analysis, the path was evidenced to be substantial at  $\rho = 0.000$  as the outcome. The proportion of path loading to standard error designates that path loadings are better than double their standard errors presenting convergent reliability; the variances also expose the choice to use. The outcomes of the path analysis concerning regression coefficients and their significances are shown in Table below

Path	Regression $\beta$	SE	t-Value	Sig.	Variance	Supported
Ease of use → usefulness	0.516	0.071	6.809	0.000		Yes
Usefulness → attitude	0.546	0.087	6.342	0.000	0.27	Yes
Ease of use → attitude	0.149	0.086	1.739	0.083		No
Attitude → intention	0.169	0.065	2.613	0.009	0.37	Yes
Usefulness → intention	0.501	0.068	7.465	0.000	0.51	Yes

Table 5: Outcome of Path Analysis

To examine the moderating impacts of self-efficacy and perceived image, the researcher utilized the Cohen  $f^2$  formula. To determine  $f^2$ , the investigator first examined the model with moderator to accomplish attitude's  $R^2$ , it was included (in)

then removed and examined it once more to attain attitude's R2 omit (ex) for each one of them; calculated f2 was calculated as follows:

Cohen f2 formula:

$$f2 = R2_{include} - \frac{R2_{exclude}}{1 - R2_{include}}$$

If f2 ranges between 0.02 and 0.15 (0.0196 < R2 < 0.130), then it demonstrates that the factor has a low moderating effect. If its range is sandwiched between 0.15 and 0.35 (0.130 < R2 < 0.260), and it displays the variable has a medium moderating effect; and lastly, if f2 is above of 0.35 (0.260 < R2), it substantiates that the variable has a solid moderating influence (Gefen and Straub, 2005).

After computing, the results of Cohen f2 formula the table below revealed that perceived image have a low moderating influence in the correlation between usefulness-attitude, nevertheless self-efficacy was discovered to be insignificant in relations of path coefficient; for that reason, unqualified for examining its moderating influence

Question	Moderator	R2ex	R2in	f2	Strength
Hypothesis 15	Perceived Image	0.392	0.425	0.057	Poor
Hypothesis 17	Self-efficacy	-	-	-	Insignificant

Table 6: Cohen f2 results and model test in smart PLS

As depicted in the table below, to test the mediating influence of perceived usefulness in the association of perceived ease of use and attitude. Both direct and indirect impacts of perceived ease of use were verified. Specified that the significance of the path ease of use-usefulness (0.80) and usefulness-attitude (0.65), the mediating role of usefulness (Hypothesis 6) is established that it is insignificant at 0.05 significance level, as indirect path did not attain a higher effect of (0.52) than the direct one (0.65).

Variable	Direct effect	Indirect effect	Total effect	Supported or not
Low ease of use	0.59	0.80 × 0.65 = 0.52	1.04	No
Low usefulness	0.65	-		

Table 7: Direct and indirect effects of ease of use

#### 4.4 Presentation and interpretation of the findings on TAM Variables

This paper also considered the variables that are devoted to the Extended Technology Model in an attempt to determine the adoption of the mobile banking technology. This examination was undertaken using the Multiple Regression analysis and Parenthesis test was done in order to establish the correlation between independent and dependent variables. The investigator used SPSS version 16 software to process the figures for examination on multiple regression.

#### 4.5 Multiple regressions analysis

Multiple regression analysis was carried out to determine the association between convenience (perceived ease of use and perceived usefulness), perceived risk, awareness and perceived cost alongside the adoption of mobile banking (dependent variable). SPSS was used to process the data and a regression model was produced. This was:  $Y = a + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6$   
Hence, Mobile banking adoption =  $a + \beta_1$ .Convenience +  $\beta_2$ .Awareness +  $\beta_3$ .Perceived Risk +  $\beta_4$ .Perceived Cost +  $\beta_5$ .Resistance to change  $\beta_6$ .Compatibility

Where: Y= Mobile Banking Technology Adoption

Y= Dependent variable

X= Independent variables

X1= Convenience (Perceived ease of use and perceived usefulness)

X2=Awareness

X3=Perceived Risk

X4=Perceived Cost

X5= Resistance to change

X6= Compatibility

a= constant

$\beta$ = is the coefficient on the first, second, third and fourth predictor variable

### Coefficients of Multiple Regression Equation

In the table below, the researcher will only focus on the  $\beta$  column which is under the unstandardized coefficients  $\beta$  and the Sig column. The  $\beta$  column represents the regression equation and is noted by  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ .

For example: Adoption of Mobile banking  
 $y = \text{constant} + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \beta_6$

### Sig

The value must be less than 0.05 for the independent variable to be statistically significant from the predictor variable and if it is more than 0.05, it will be statistically insignificant.

	Unstandardized Coefficients	
	B	Sig Value can be referred to as the P-value and it must be less than 0.05
1 (Constant)	1.174	.000
$\beta_1$ Convenience	.496	.028
$\beta_2$ Awareness	.586	.034
$\beta_3$ Perceived Risk	-.068	.001
$\beta_4$ Perceived Cost	.392	.223
$\beta_5$ Resistance to change	-.072	.024

β6 Compatibility	.283	.017
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Table 8: Dependent Variable- mobile banking services

The P-value of perceived cost was 0.223 which is greater than 0.05 and that means that it insignificantly contributes to the adoption of mobile banking. Conversely all other predictors have significant values which are less than 0.05.

The outcomes as depicted from the table above, recognized a multiple linear model for this paper which was:

$$\text{Adoption of Mobile banking} = 1.174 + 0.496.\text{Convenience} + 0.586.\text{Awareness} - 0.068.\text{Perceived Risk} + -.072.\text{Resistance to change} + 0.283.\text{Compatibility}$$

This model points out that an additional unit increase in convenience the adoption of the mobile banking technology, increases by 0.496. An upsurge of one unit of awareness, mobile banking adoption increases by 0.586. A unit decrease of mobile banking leads to an increase of mobile banking by 0.068. A unit decrease in resistance leads to an increase of mobile banking adoption by 0.072. Lastly a unit increase in compatibility leads to a 0.283 increase in the uptake of mobile banking

These results agree with the outcome attained by Dineshaw and Munien (2013) in German, who settled that financial cost, security risk and social norm were the most resilient causes on the adoption of a new technology as they had a positive correlation coefficients to innovative technology acceptance.

#### 4.6 Chapter Summary

In this section, data was presented, analyzed and discussed. This was grounded on the data obtained from the residents of Masvingo province who are not formally employed. The outcomes depicted that more respondents had a good attitude towards the mobile technology in Zimbabwe. Demographic factors such as age, income, education level, gender proved to be huge determiners' of the technology adoption. Summaries of the study findings and recommendations will be suggested in the next chapter. These suggestions will be used to enhance the adoption of mobile banking in Zimbabwe.

#### Conclusion

From the key outcomes of the research study, it was settled that: Demographic factors such as age, gender, level of income, and level of education contributes towards the adoption of mobile banking services in Zimbabwe. Perceived risk is an essential factor that contributes towards the adoption of mobile banking in Zimbabwe since most bank people fear losing their funds. Perceived ease of use is another key factor that contributes to the adoption of the mobile banking technology since most users agree that the system is easy to understand and use. Nevertheless, awareness is still on its way up. Those with bank accounts proved that they are fully aware of the technology but some who are financially excluded are still learning and hearing about the technology.



## 6.0 References

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