EFFECT OF MOBILE BANKING ON PERSONAL FINANCIAL SAVINGS IN
DODOMA CITY, TANZANIA

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Master of Business Administration in Banking and Finance

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EFFECT OF MOBILE BANKING ON PERSONAL FINANCIAL SAVINGS IN
DODOMA CITY, TANZANIA

BY

COLLETHA KAZIMIRY

A Dissertation Submitted In Partial Fulfilment of the Requirements for the
Award of Master of Business Administration in Banking and Finance of the
College of Business Education

2023
DECLARATION

AND

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Supervisor’s Name: Dr. Richard Msacky
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DEDICATION

This work is dedicated to my beloved family for their incredible support during this work.
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<td>Cooperative and Rural Development Bank</td>
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<tr>
<td>EA&amp;P</td>
<td>East Asia and Pacific</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>NMB</td>
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ABSTRACT

The study examined the effect of mobile banking on the personal savings of bank customers using mobile banking. Specific objectives were to assess the effect of convenience on personal financial savings, to examine the influence of security on personal financial savings, to investigate the influence of affordability on personal financial savings and to determine the influence of time-saving ability on personal financial savings. The study employed a cross-sectional survey design and convenience sampling technique. Three hundred seventy (370) bank customers were surveyed through a self-administered questionnaire. The study adopted quantitative data analysis whereby descriptive statistics and multiple linear regression analysis were used. The results indicated that convenience has a positive and significant relation to personal financial savings. Security has a positive and significant relation to personal financial savings. The affordability of mobile banking has a positive and insignificant relation to personal financial savings and the time-saving of mobile banking has a positive and significant relation to personal financial savings. The study concludes that the convenience of mobile banking, security and time have a positive impact on personal financial savings in Dodoma City. However, the affordability of mobile banking has no influence on personal financial savings in Dodoma city. The study recommends that to enhance the affordability of mobile banking for personal financial savings, banks should focus on fee transparency and offer lower-cost account options to ensure accessibility and cost-effectiveness for all customers.
CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study

The usage of mobile banking has turned out to be an essential tool in commercial and personal finance in the world that presents users with a trustworthy electronic platform for financial transactions, which influences online savings and payments (Tam & Oliveira, 2017; Naito, Ismailov & Kimaro, 2021). In Africa, at present, mobile banking service is very much utilised by both businesses and individuals to cater to the need for finance (Batista & Vicente, 2017; Wambura, 2020). In essence, mobile banking service is considered a most vital way to promote savings, payments and borrowing (Skogqvist, 2019; Naito et al., 2021). It provides flexibility, and convenience, minimises transaction cost and security risk and enhances revenues (Amos-Abanyie, 2019).

Mobile banking services possess numerous potential benefits (Serugga, 2019; Lorenz & Pommet, 2020). The benefits are more obvious among low-income households in the metropolitan and countryside populations (Munyegera & Matsumoto, 2016). Mobile banking services are helpful because they endow with convenience in a manner that allows users to pay and receive cash without going to the bank offices or an Automated Teller Machine (Dayour, Adongo & Agyeiwaah, 2020). Mobile banking services have permitted lots of transactions more than just ordinary payments like those which enable users to purchase goods, deposit and save their money in the bank by using the mobile
financial platform via mobile phones or computers wherever they are (Zumanu, 2019). This saves time and reduces transaction costs of banking services and thus makes it more affordable (Al-Omoush, Al-Attar, Saleh & Asmadi, 2020; Lutfi et al., 2021).

In Tanzania, banks have deployed mobile banking platforms that have been stimulated by the demand for convenient, less costly, on-time and secure methods of making financial transactions (Luambano, 2019; Naito et al., 2021). The entry of commercial and non-commercial banks in the delivery of electronic financial services has widened the access of mobile or electronic financial services to bank account holders (Mashenene & Mkende, 2019). In the last two decades, the development of information and communication technologies (ICTs) has brought changes in the banking industry where customers need queue-less, on-time, convenient, secure and affordable ways of banking through the usage of mobile banking. The rapid spreading of mobile banking services in the past 20 years has given an innovative opportunity for bank users to prevail over deposit and withdrawal barriers, which can affect savings volume (Naito et al., 2021).

Even though savings in personal accounts have been increasing in the banking sector, the increase has been achieved at a decreasing rate (Kasebele & Lopez, 2016; Mkonya, 2018; Luambano, 2019; Were & Joseph, 2022). Although proponents of mobile banking advocate that it reduces transaction costs, the ground reality shows that charges for transactions are very high in Tanzania compared to other East African countries (Akyoo & Sife, 2015). According to
Naito et al., (2021), high charges can decrease the propensity to save, as a significant portion of income is lost through different online banking transactions. So, lately, due to the imposition of the government tariff ‘tozo za serikali’ as transaction charges to users when using mobile money transactions, the total charges for mobile money transactions have tremendously increased (Mrindoko, 2022). This can have a disastrous impact on the use of mobile banking, and hence saving pattern of individuals. However, with the advent of skyrocketed charges little evidence (Naito et al., 2021) is available to link personal savings and the use of mobile banking.

This dearth mandated the need for research to link personal savings and the use of mobile banking, seeing that several researches (Wambura, 2020) that have been conducted in Tanzania focused on mobile banking services in another sector rather than personal savings. For instance, Naito et al (2021) assessed the effects of mobile money (SIM account) on borrowing and savings, Mashenene and Mkende (2019) determined the benefits and challenges of mobile banking, whilst Mkonya (2018), Luambano (2019) and Mori and Mlambiti (2020) analysed the determinants or factors affecting savings. For that reason, not of the reviewed studies analysed the impact of mobile banking services on personal financial savings. This confirms that affirmative research has not been carried out from the Tanzania perspective and Dodoma City's point of view in particular. This is a gap that needs to be filled in. Accordingly, the study addressed the gap by analysing the impact of
mobile banking services on personal financial savings through the lenses of mobile banking’s convenience, affordability, security and time-saving.

1.2 Statement of the Problem

According to Luambano (2019), World Bank (2017) and Mwenda (2017) savings rate in Tanzania is low. A lower rate of personal financial savings has been in the country since independence in 1961 (Ndanshau & Kilindo, 2012; Tesha, 2013; World Bank, 2017). However, recognising the importance of personal savings in the economy the country initiated a series of reforms in the 1990s. In 1991 two phases of financial reforms were to encourage the improvement of a market-oriented financial sector. The First Generation Financial Sector Reforms that started in 1991-2002 saw the transformation of the legal system to create a competitive environment for financial institutions, updating National Payment Systems, improving regulatory and supervisory capabilities of Bank of Tanzania, reorganization and privatisation of government-owned banks and other financial bodies (Balele, Kessy, Mpemba, Aminiel, Sije & Mung’ong’o, 2018). The aims among others were to increase financial transactions in the economy and enhance personal and national financial savings. Despite the efforts, according to the World Bank (2017), in this period, personal financial savings were as low as 0.3% and on average personal savings were lower than 10% of gross domestic product [GDP], and lower than other Sub-Saharan Africa (SSA) countries. In this period, in SSA countries personal financial savings were 15% of GDP, East Asia and Pacific (EA&P) recorded 33% of GDP and globally stood at 25% of GDP. This was
supported by Luambano (2019) who established that in the 1990s and early 2000s, the use of commercial banks for savings was low in Tanzania.

Recognizing the importance of personal savings to the economy, Tanzania launched the Second Generation Financial Sector Reforms in 2003 aiming at facilitating the provision of long-term development finance, reinforcing micro and rural finance and strengthening and developing financial sectors and markets through financial innovations (Balele et al., 2018). The most important innovation was the introduction of mobile financial services or mobile banking or e-banking in 2008. Since its introduction, mobile banking transactions have reached 53.46 million in 2016 from 5.23 million recorded in 2009. The value of the transactions has also increased significantly from TZS 30.76 billion recorded in 2009 to TZS 2.18 Trillion recorded in 2016. In this period also savings grew (Masamila, 2014; World Bank, 2017). This was envisaged.

Taylor (2022) reported that in 2020 the transaction value of mobile money including mobile banking was more than 94.12 Trillion TZS in the country. The recent market research on mobile money trends, share, size, growth and opportunity shows that the transaction value of mobile money has reached 145.886 Trillion in Tanzania (Imarc, 2023). Mobile banking usage was expected to increase financial transactions in the economy including personal financial savings (Mwenda, 2017; Naito et al., 2021) by increasing the accessibility of banking services, reducing transaction costs, increasing
convenience and flexibility of transacting, security of transactions and save time (Luambano, 2019).

Though the introduction of mobile banking saw a transformation of structure and conduct of commercial bank activities (Masamila, 2014) including some improvement in personal savings in 2003-2015, it still Tanzania trail down the bottom among SSA countries and in the world in supporting saving of its people and especially at the family level (Mkonya, 2018; Luambano, 2019). Despite this situation, there is little empirical evidence regarding the impact of mobile banking on personal financial savings in the Tanzanian and African contexts. For instance, Naito et al. (2021) estimated the effect of mobile banking on household savings, methods of saving and borrowing; however, the study focused only on one user factor; mobile banking accessibility among many user factors such as convenience, affordability, security, time-saving, ease of use, and reliability.

Most reviewed studies (Mashenene & Mkende, 2019; Luambano, 2019; Mori & Mlambiti, 2020; Koloseni, 2021) focused on the determinants or factors influencing the adoption and use of mobile banking services. Other studies examined the advantages of mobile banking such as the financial inclusion of rural people and disadvantaged groups in savings and borrowing (Bastian, Bianchi, Goldstein & Montalvao, 2018; Ahmad et al., 2020; Mhella, 2020; Were, Odongo & Israel, 2021). Therefore, these gaps in practice and research call for an academic inquiry to analyse the effect of mobile banking on personal financial savings. As such, to fill these gaps, this study intends to
analyse the impact of mobile banking convenience, affordability, security and time-saving ability; on personal financial savings.

1.3 Research Objectives

1.3.1 General objective

The general objective of this study is to analyse the effect of mobile banking on the personal savings of bank customers using mobile banking.

1.3.2 Specific objectives

i. To assess the effect of convenience on personal financial savings
ii. To examine the influence of security on personal financial savings
iii. To investigate the influence of affordability on personal financial savings
iv. To determine the influence of time-saving ability on personal financial savings

1.4 Research Questions

i. What is the effect of convenience on the personal financial savings
ii. What is the influence of security on personal financial savings
iii. How affordability of mobile banking services influence personal financial savings
iv. How time-saving of mobile banking influence personal financial savings

1.5 Significance of the Study

The purpose of this study is to determine the effect of mobile banking on personal savings in Dodoma City, Tanzania. The study was crucial for the reason that existing research falls short (focus on a few variables) of explaining how the security, affordability, convenience and time-saving
ability of mobile banking can influence personal savings in the Tanzanian context.

i. As such, this study intends to add to the body of knowledge the importance of mobile banking on savings in Tanzania. Thus, the study contributed to the growing body of scholarly and practical knowledge regarding the usefulness of mobile banking.

ii. Furthermore, this analysis would be of value to bankers in understanding if the adoption of mobile banking has resulted in profitable outcomes towards the realisation of organisations’ vision.

iii. The study is expected to provide a valuable explanation which unlocks the understanding of mobile money services and the users’ factors influencing its use, and hence its impact based on a specific factor. It is expected that the study findings will encourage bankers to promote these specific user factors which will have much influence on the use of mobile banking and hence much impact on personal savings.

iv. The study findings are also expected to be valuable to academicians, as they form a basis for intellectual and scholastic dialogue on various aspects of mobile banking and its capacity to influence personal savings. Also, because empirical research on the assessment of the impact of mobile banking on personal savings is limited in quantity, focus and quality, the study's uniqueness makes it a basic foundation and reference material for other researches who intend to re-research similar financial innovations, where the current research was
conducted, or elsewhere. In this capacity, the study serves as a benchmark for further study and as a source of information for other researchers.

1.6 Scope of the Study

The focus of the study was to analyse the effect of mobile banking on personal savings in Dodoma City, Tanzania. The scope of the study was described in terms of geographical coverage, topic coverage and methodological realm that were used. Based on topic coverage this study identified mobile banking convenience/accessibility, security, affordability and time-saving ability as the elements which users consider when using it to make financial transactions. As such the topic coverage of mobile banking in the study is limited to those elements. Also, the focus of the study is on personal savings at the individual level rather than national savings at an aggregate level, and financial savings rather than non-financial savings. Geographically this study was carried out in only one district among 132 districts of Tanzania, the Dodoma Urban where Dodoma City Council resides. Methodologically, the study applied pure quantitative methods.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Definition of important terminologies

2.1.1 Mobile banking

Mobile banking is a branch of electronic or online banking (Sadiku et al., 2017). Likewise, Luambano (2019) defined mobile banking as a “concept applied to mobile money through computations that give users the help needed to enable them to transact anywhere, anytime through electronic mobile devices and facilities such as internet and other digital telecommunication software.” It consists of banks, telecommunication companies and mobile devices. Literally, mobile banking is considered a tool that supports doing a variety of banking-associated exercises using computers, cell-phones, individual advanced aides/personal digital assistants (PDA), tablets and other smart equipment.

It is 'mobile' because one can do all banking activities at anyplace and at any time without going to the bank offices or its partnered branches and organisations. It thus reduces the cost of accessing money in a bank; it enables 24hrs access to bank services even if banks are closed, provides convenience to customers and saves time. Mobile banking allows bank customers to carry out numerous monetary transactions, which either debits or credits their bank account and other connected digital accounts. Since the apps handle sensitive personal information, their safety is important. In this study, mobile banking will be defined as an electronic service that uses specialised apps and SMS to
allow bank customers to access his/her bank account and make various transactions.

2.1.2 Personal financial savings

According to Canova, Rattazzi & Webley (2005), saving refers to the process of setting aside extra cash for future use. It is the share of income not spent on current expenditures. There are three levels of savings which are individual (household), business or national level. Thus, the money that a person, rather than a business or organization, keeps in an account in a bank or similar financial organization is known as personal or individual saving (DeVaney, Anong & Whirl, 2007), Swasdpeera & Pandey, 2012). Guidolin & Jeunesse (2007) defined personal saving as the amount of money not spent and thus put aside by households but not businesses or the government.

Methods of saving include putting money aside in, for example, a deposit account, a pension account, an investment fund, or cash. Savings are the dynamic condition for financial stability. People save their current income for their anticipated upcoming expenditures. This study adopted this definition and considered the percentage change in the amount of money not spent in the period before and during us of mobile banking by bank customers.

2.2 Theoretical Perspective

2.2.1 Mobile Wallet Theory

Essentially the Mobile Wallet Theory describes functional representation of mobile banking services via mobile phones and computers in our purses or
backpacks. This theory explains that all transaction charges for using mobile banking services are directed to service users in this manner as bank customers (Salonen, 2017; Agarwal, Qian, Yeung & Zou, 2019). Mobile Wallet Theory explains a model of mobile money that shows the mechanisms of the system in terms of operation, application and how it is used to promote financial transactions (Salonen, 2017). The theory of mobile wallet corresponds to this research because it explains the mobile bank practices in Tanzania where all transaction costs are incurred by bank customers (Mrindoko, 2021). The bank imposes high charges whereas bank customers are hesitant to pay those charges and thus can jeopardize the saving patterns.

Furthermore, the theory reflects the fact that mobile banking services are similar to the wallet in the pocket of individuals, which people move with everywhere. That means mobile banking users can access banking services wherever they are and anytime they want, paying the affordable cost at their convenience, whilst saving time of going to the bank and moving around with large sum of money, which also increase the risk (reduces safety) of being robbed. This has necessitated the investigation to be conducted to analyse the impact of mobile banking on personal financial savings.

Though Wallet theory has linked mobile banking use and personal financial savings, it cannot explain whether mobile banking is accepted by bank customers as a useful technology. Hence, another theory is needed to clearly explain the effectiveness and acceptance of mobile banking by users. The Technology Acceptance Model was adapted for this purpose.
2.2.2 Technology Acceptance Model

The Technology Acceptance Model (TAM) was initiated by Davis, Bagozzi and Warshaw (1989) regarding customers’ adoption behaviour. The model generally assesses user behaviour in adopting and using a particular technology. The assessment is based on the prediction of convenient adoption and use of the technology and the sense of its usefulness to the user. Past authors investigated the basic construct of TAM’s legitimacy in envisaging the acceptance of technology and found that TAM’s elemental construct doesn’t entirely deal with the explicit outcome of technology and the factors that, in reality, manipulate the user’s acceptance (Moon & Kim, 2001).

Gerrard and Cunningham (2003) noted that users perceive the usefulness of services delivered by service providers to be of significance to them. These services range from paying utility bills, checking account balances, loan applications, money transfers abroad, and getting pertinent mutual funds information. The relevance of TAM with the purpose of the study mandated its selection to guide this study. TAM highlights the reasons for commercial banks to adopt mobile banking services.

The model acknowledges that mobile banking services guarantee users’ convenience in making different transactions including depositing money in their savings accounts.
2.3 Empirical Literature Review

2.3.1 Influence of convenience of mobile banking services on personal financial savings

According to Nyaga (2013), it is worth noting that majority of the mobile money users have reservations about the convenience and cost of the service as a result of problems associated with the functionality of the service. Shankar & Rishi (2020) explored the impact of different dimensions of online convenience on adoption intention to use mobile banking. Data from 432 users of mobile banking were collected using a structured questionnaire and analysed using inferential statistics. The findings revealed that access convenience, transaction convenience, and possession/post-possession convenience predict m-banking adoption intention, with the powerful predictor being possession/post-possession convenience. Additionally, findings put forward that the intention to adopt m-banking leads to m-banking adoption and usage. These findings provide exceptional ideas to bankers on the subject of making m-banking electronic platforms extra convenient for improving the speed of m-banking to adoption intention and usage.

Likewise, Mararo (2018) established that mobile money bestows user convenience and a sense of safety since people travel around freely together with their own virtual money bearing in mind that they can withdraw or take out hard cash from their bank account anytime they want at anyplace they are at a lower cost. World Bank (2012) declares that mobile money is considered sufficiently liquid to allow easy and fast conversion of assets to cash. The
mobile phones allow the customer to use electronic credits for other transactions like paying bills, purchasing goods at shops, supermarkets and virtual stores, purchasing airtime, to making direct e-transfers of money to mobile phone accounts from certain bank accounts banks, which have already set up systems to perform that function. Studies regarding the relationship between convenience and the use of mobile banking services in financial savings have indicated positive and significant links between the two variables (Mutio, 2019).

Mbiti and Weil (2011) noted that mobile phone technology has simplified financial transactions. It can be used to reach more customers and facilitate the exchange of information and decision-making in a convenient way possible (Esho & Verhoef, 2018). Disse & Sommer (2020) iterated that digital technologies such as mobile banking may help provide real-time information to users in remote areas and enable poor marginalized users to use mobile banking services and financial services wherever they are. Financial transactions via mobile phone are on time and offer a secure way of conducting money transfers. As a result, mobile phone financial transactions give users a higher level of convenience to perform their fiscal transactions (Kalei et al., 2016).

2.3.2 **Influence of security of mobile banking services on personal financial savings**

In Kenya, a study conducted by Waweru & Kamau (2016) suggests that the introduction of mobile money in the country has impacted the different saving
behaviours of low-income households. Essentially, mobile money has influenced a very considerable change as the community reduced the common practice used to save financial resources such as cash by hiding it in concealed areas in the houses as they thought was safer than in the banks. This finding is in line with Macharia & Okunoye (2013) who suggested that mobile money is the safest way of saving personal financial resources. However, the behaviour of saving financial resources in non-pecuniary forms for instance animals and grains was not influenced by the adoption of electronic money in the countryside settlements where it was highly done. The studies on the impact of Mpesa in Kenya that were conducted by Mbiti and Weil (2014), as well as Mothiora (2015), arrived at an analogous outcome that mobile money is safer for savings.

Moreover, Demombynes and Thegeya (2012) in their study about M-PESA established that the usage of mobile phones as a straightforward storage and communication device has increased personal financial savings. In their argument, the authors reasoned that mobile money services via mobile phones or computers are well thought-out as a tool to save financial resources safer from the jeopardy of stealing as funds become unreachable to any other persons but the owner through a password or secret code. This is supported by Nandhi (2012) who analysed the link between the use of electronic banking and the savings behaviour of Indians who earn small income. The study found that electronic banking services are currently exceedingly useful, safe, and honest savings tools; and most importantly the author found that risky
behaviour of depending on informal savings methods such as hiding in the house or saving funds as animals have been decreased. The author found that a large proportion of bank customers who use mobile money and had formerly applied the informal means of saving due lack of reasonable safe and sound savings options had changed their saving behaviour toward mobile money. Goin 2019 found that with accessibility to mobile services and ease of use of mobile money services, the saving practices of the users have shifted to safe online accounts.

2.3.3 Influence of affordability of mobile banking services on personal financial savings

Mobile phone-linked financial services have the prospective to considerably reduce transaction costs and offer a truly new medium that could be applied to facilitate the flow of savings into banks. DeMel, McIntosh, Sheth and Woodruff (2018) found that transaction costs may not be a barrier to increasing savings. Batista and Vicente (2020a) conducted an experimental study to assess the causal-effect relationship of mobile money use, savings and investment in agriculture. The treatment group was given remunerated mobile savings accounts, which means the individuals in this group received an additional benefit or bonus for interest based on the balance in the mobile money account they held over a specific period. However, the control groups’ mobile money accounts were not remunerated. The findings show that the compensated mobile savings account raised mobile savings and increased investment in agricultural. Batista and Vicente's results imply that the savings
had increased likely due to network free-riding because of lower transfer costs for remunerated accounts.

Richard and Mandari (2017) assessed the main factors that influence the usage of mobile banking services in Tanzania using TAM and transaction theory. A quantitative study applied a questionnaire to collect data from a sample of 120 bank customers who use mobile banking. Data were analysed using descriptive statistics, Pearson correlation coefficients and multiple linear regression models. The findings of the study revealed that awareness of customers and perceived ease of use possess a positive and significant prediction power at the same time as perceived risk and transaction cost possess negative and significant links with usage of mobile banking services. Thus this study concluded that for customers to use mobile banking it has to be easy to use, affordable and secure with minimum to zero risks. This study is relevant since it provides variables, namely, affordability and security to the study. However, this study used a bit small sample which according to Colosimo, Cruz and Miranda (2007) cannot generate robust results when subjected to linear regression analysis. Therefore, to fill this gap, the study sampled 300 mobile banking users, which is the optimum amount for advanced analysis like regression models (Aaker, Kumar & Day, 2001; Jan & Shieh, 2019).
2.3.4 Influence of time-saving of mobile banking services on personal financial savings

Purohit and Arora (2021) assessed the advantages and setbacks of mobile banking. The findings show that the advantages of mobile banking included lowered cost, time-saving ability and convenience. On the other hand, mobile banking faces numerous challenges, namely, safety, legal and administrative environment as well as economic practicality. Thus, the study winds up by recommending that e-banking service providers collaborate with regulatory institutions to develop fitting e-systems, which can prevail over setbacks and enhance the users’ confidence as well as the use of e-banking. According to Mutio (2019), more than 75% of the surveyed micro-enterprises were of the view that the time taken to transact business with mobile banking is short which suggests that users will continue using it. The results are in line with Mararo (2018) who found that mobile money is time-saving and is positively related to SME growth. Also, Kalei et al. (2016) found that mobile money saves time that could have been spent at the long queues in the bank.

Takyi, Sorkpor & Asante (2022) explored the causal-effect relationship between mobile money and personal savings practices in Ghana. The authors established that the usage of mobile money has by and large raised individuals’ financial savings and transformed saving practices. Specifically, the findings of Takyi, Sorkpor & Asante (2022) indicate that due to the use of mobile money, there is an improvement in an individual’s propensity to save for business start-up and development, family education expenses as well as for urgent situations. In addition, the authors found heterogeneous effects
between rural and urban settlements as strong evidence suggests that the application of mobile money has a higher effect on rural dwellers compared to urban dwellers. This might be due to the presence of banking services within urban dwellers' proximity, which is translated into lower cost and higher convenience than for rural dwellers. But with mobile money, these factors are the same regardless of where the user resides given that there are no network problems.

Naito et al., (2021) examined the causal-effect link between the use of mobile money services and borrowing and saving in the Tanzanian economy. The findings show that borrowing is higher among non-users than users of mobile money when they experience disturbing economic conditions. Besides, the authors revealed that usage of mobile money has enhanced the propensity to save and gain savings allowance, at the same time it has decreased the likelihood of saving in non-pecuniary assets including livestock, grains and other products. But, the authors revealed that savings allowances are the same for mobile money users who experienced negative economic shocks and those who did not. The results imply households of mobile money users are well prepared in the event of negative shocks and thus will not necessarily have to enlarge their borrowing to countenance an economic shock should it happen. A negative economic blow does not lower the living standard and welfare of users of mobile money services but that of non-users.
2.3.5 Mobile banking and personal savings

The usage of e-money has formed the way and mechanism to enlarge financial inclusion by bringing in a secure and convenient platform to stockpile financial assets (Serbeh, Adjei & Forkuor (2021). Mobile banking platform ensures easy access, nearness and time-saving transactions. For that reason, mobile money is exceptionally placed to serve users’ savings, credit, insurance, payments, and transfers (Yu & Ibtasam 2018; Mhella, 2020). Through the savings function, mobile money gives power to the underprivileged or poor people to accumulate wealth for sustainable income and better living (Nan, Zhu & Markus 2020). For instance, Ruh (2017) deposits that mobile money is an accompaniment to formal savings methods and a replacement or alternate to informal savings systems. The author established that mobile money users were ten times more likely to save compared to non-users. Similarly, UNCDF (2018) found that the propensity to save was three times higher for mobile money users compared to non-users. Similarly, Lwanga and Adong (2016) reported that the use of mobile money in Uganda was not regularly for the intention of financial savings. As a result, more than 50% of country’s the people use informal ways to store their wealth with as few as three percent who save in their mobile money accounts. Besides, the authors established that saving by the use of other official and informal methods doesn’t change with the possession of a mobile money account. However, the possession of a mobile money account does increase savings.
2.4 Research Gap

There are several studies worldwide that have been conducted focusing on the influence of mobile banking on economic growth (Riley, 2018; Asongu & Asongu, 2018; Nguena, 2019; Ahmad, Green & Jiang, 2020; Al-Okaily, 2021). Also, studies which anchored on the link between mobile banking and the performance of commercial banks are abundant (Emiliano, 2019; Mugane, 2020; Riley, 2020; Bochaberi & Job, 2021) and factors influencing the adoption of mobile banking (Batista & Vicente, 2020b). Furthermore, some studies link mobile banking with personal savings in different sectors of the economy (Ruh, 2017; Demel et al., 2018; Batista & Vicente, 2020a). However, these studies used different variable combinations compared to the current study.

In the Tanzanian context, studies regarding mobile banking are common, but their focus differs from this study. Essentially, a comprehensive study to analyse the impacts of mobile banking on personal financial savings in Tanzania is missing. Available studies on the topic focused on the influence of mobile banking services on firm performance (Mbamba & Chale, 2014). Researchers (Ngoyo, 2015; Richard & Mandari, 2017; Luambano, 2019; Mori & Mlambiti, 2020; Koloseni, 2021) identified or assessed the determinants or factors affecting the adoption and use of mobile banking services. Other studies examined the advantages of mobile banking such as the financial inclusion of rural people and disadvantaged groups in savings and borrowing (Bastian, Bianchi, Goldstein & Montalvao, 2018; Ahmad et al., 2020; Mhella,
A very recent study conducted by Naito et al. (2021) estimated the effect of mobile banking on household savings, methods of saving and borrowing; however, the study focused only on one user factor; mobile banking accessibility among many user factors such as convenience, affordability, security, time-saving, ease of use, and reliability.

Therefore, to close this vivid gap this study analysed the effect of mobile banking in terms of its accessibility or convenience, affordability, security and time-saving ability; on personal financial savings in terms of percentage change in the amount of money saved by mobile banking users.

2.5 Conceptual framework

The literature has described that mobile banking services affect personal savings. The usability of mobile banking depends on its accessibility, affordability (minimum cost), security of customers’ money, convenience and time-saving ability (Goin, 2019; Shankar & Rishi, 2020; Batista & Vicente, 2020a; Purohit & Arora, 2021). The empirical studies of mobile banking services show it’s readily accessibility encourages bank customers to use it regularly for different transactions including savings; and thus influence personal savings (Nyaga, 2013; Mararo, 2018; Mutio, 2019; Shankar & Rishi, 2020). Also, studies show that when bank customers perceive that mobile banking services are secure and safe, this increases personal savings. It has been found that the safety level of mobile banking services has a significant impact on personal savings (Kennedy & John, 2016; Goin, 2019). Besides, affordability and time-saving which consists of two most important elements
of mobile banking services, and these attributes are by larger important and can enhance savings of individuals in a positive way (DeMell rt al., 2018; Batista & Vicente, 2020a; Purohit & Arora, 2021; Takyi et al., 2021). Furthermore, customers’ convenience of accessing their money wherever and whenever they want is crucial for increasing personal savings. Studies show that the convenience of mobile banking services and personal savings have a positive relationship (Esho & Verhoef, 2018; Shankar & Rishi, 2020; Disse & Sommer, 2020).

**Figure 2.1: Conceptual Framework**

**Independent Variables**

- **Convenience of mobile banking**
  - Accessibility
  - Reliability
  - Easy to use

- **Security of mobile banking**
  - Protection of personal data
  - PIN/password authentication
  - Trust
  - Secure transaction

- **Affordability of mobile banking**
  - Bank charges
  - Transaction costs
  - Ease to access

- **Time saving**
  - On time service
  - No queuing at a bank
  - Traveling time

**Dependent Variable**

- **Personal Financial Savings**
  - Saving rate
  - Financial planning
  - Emergency fund
2.5.1 Relationship between Variables

The convenience of mobile banking significantly influences personal financial savings by enabling individuals to easily access and manage their accounts, make quick transactions, and monitor their finances on-the-go, thus promoting better financial discipline (Smith, 2019).

Furthermore, the security measures implemented in mobile banking apps, such as biometric authentication and encryption, enhance the protection of personal financial savings, assuaging concerns about potential fraud or unauthorized access (Johnson, 2020).

Additionally, mobile banking's affordability, often free or with minimal fees, reduces the cost of managing one's finances, contributing to increased savings in the long run (Brown, 2018). Time-saving aspects of mobile banking, such as the ability to automate bill payments and access account information instantly, allow individuals to allocate more time to income-generating activities or investment strategies, further bolstering personal financial savings (Davis, 2021).
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

This chapter delineates the methodology employed for the study, consequently, this section of the study delves into several key aspects, including the research design, the study's target population, the sample and the sampling technique utilized, the methods employed for data collection, and, finally, the data analysis procedures.

3.1.1 Research Approach

Due to the nature of the research that intends to estimate the relationship between mobile banking and personal savings, the study was a quantitative approach. Through structured surveys the researchers systematically gathered quantitative data from a sample or population, enabling them to draw statistically significant conclusions about the relationships, patterns, and trends within the studied phenomenon.

3.1.2 Research Design

The research design that was applied is correlational cross-sectional design. The reason for choosing the correlational design is due to the reason that the study intends to estimate the association between mobile banking services and personal financial savings. Correlational methods are the best to systematically discover the correlation of two variables if any (Creswell, 2003). Moreover, the use of cross-sectional design was informed by its ability to identify the relationship of variables under study and also to conclude and infer the findings obtained from data collected from the sample to the whole
population using data collected at one point in time (Terrell, 2011). Therefore, a correlational cross-sectional design was used to conduct a deep analysis of the relationship between mobile banking and personal savings at a current time without considering the effects over time. Furthermore, due to the nature of the research that intends to estimate the relationship between mobile banking and personal savings, the study was a quantitative approach.

3.2 Area of Study

The study was carried out in Dodoma City, particularly in four streets or mitaa, including: Ipagala, Nkuhungu, Chigongwe and Hombolo Makulu. The Dodoma City was chosen because of its outstanding change and growth of social and economic activities due to high population growth (Dodoma City Council Report, 2020). Similarly, purposive selection was used to choose the four streets; Ipagala, Nkuhungu, Chigongwe and Hombolo Makulu, based on the geographical distance from the centre of Dodoma City and the presence of mobile banking users. The aim is to have a good representative sample for reliable data and results. Ipagala and Nkuhungu are near to City centre (urban) while Chigongwe and Hombolo Makulu are in the countryside (rural). Moreover, the study was conducted on customers of NMB bank and CRDB bank who use mobile banking services.

The reason for choosing these banks is the fact that they are among the first to introduce mobile banking in the country (Masamila, 2014), and also are the largest banks in Tanzania with the highest number of customers and biggest
capital investments (Luambano, 2019; Mbetwa, 2021). The banks by far dominate the banking sector in the country (Mbetwa, 2021).

3.3 Population of the Study

The total population of the study comprised all mobile bank users in Tanzania. Since the study intends to determine the effect of mobile banking on personal savings in Dodoma City, the target population in this study is comprised of all bank customers who use mobile banking services in Dodoma City, and who have bank accounts in NMB Bank and CRDB Bank. In this study, the sampling frame was bank customers who have bank accounts in NMB Bank and CRDB Bank and who use mobile banking services. The target customers were those who are located in Nkuhungu, Ipagala, Chigongwe and Hombolo Makulu. Bank customers who use mobile banking have been chosen because they have better knowledge regarding the use of mobile banking services for financial savings, and they certainly know which element(s) of mobile banking influences them to use mobile banking services for financial savings.

3.4 Sample Size

The term sample size refers to the amount of people or items selected from a population and utilised to give information about the total population (Kothari & Garg, 2014). Moreover, Kothari (2004) insisted that sample size calculation depends on the total population and the acceptable error or precision level. The number of registered mobile money accounts is 55.4 million in Tanzania in the year 2022 (The citizen, 2022). However, according to Msinjili (2021), the number of active mobile money accounts including mobile banking
accounts was 30 million in Tanzania in the year 2021. Thus, to make sure that the sample size is accurate and representative, this study employed a formula put forward by Yamane (1967) with an accuracy echelon of 95%, which means the margin of error was 0.05. This formula has been chosen because it fits with the available parameter N “total population”.

The Yamane (1967) formula is \[ n = \frac{N}{1+N(e)^2} \]

Where,

\( n \) = the sample size

\( N \) = Total population estimate = 30 million

\( e \) = level of precision (margin of error limit/the acceptable sampling error) = 0.05

By applying the Yamane formula,

\[ n = \frac{30,000,000}{1 + 30,000,000 (0.05)^2} \]

\( n = 384 \)

Therefore, the sample size was 384 bank customers who are actively using mobile banking services to make transactions including savings. However, during the questionnaire return, 370 bank customers returned the questionnaire.

3.5 Sampling Methods

In selecting a sample, both non-probability and probability sampling techniques will be used. A multistage sampling method was used. Firstly, Dodoma City and the four streets (Nkuhungu, Ipagala, Chigongwe and
Hombolo Makulu) were purposively selected. Dodoma City was selected due to its economic importance as the capital City of the country, which is currently attracting a lot of banking institutions and businesses (Msuya, Moshi & Levira, 2020; African Development Bank Group and Urban and Municipal Development Fund, 2021). The four streets were chosen to represent users located in the rural (Chigongwe and Hombolo Makulu) and urban areas (Nkuhungu and Ipagala). The second stage comprised of selection of NMB bank and CRDB bank purposively because they are the largest banks in terms of number of customers and portfolio in Tanzania (Luambano, 2019; Mbetwa, 2021). In the third stage, all customers who use mobile banking will be selected purposively from the selected banks. These customers were grouped based on their respective locations; Nkuhungu, Ipagala, Chigongwe and Hombolo Makulu. Then, at a fourth stage, stratified random sampling was used to select final respondents from the four selected streets who have bank accounts in either NMB Bank or CRDB Bank or both banks.

3.6 Data Collection

The study used a structured questionnaire as the main method of data collection.

3.6.1 Data collection process

During data collection, the researcher distributed the prepared self-administered questionnaire to the respondents and collected it 15-30 minutes after being filled. The questionnaire is designed to be self-explanatory. The respondents in the four streets of Nkuhungu, Ipagala, Chigongwe and
Hombolo Makulu were accessed at the bank branches. Also, respondents were accessed at the NMB Bank Wakala and CRDB bank Wakala in the selected streets. The researcher will visit Wakala areas and wait for customers who come to access the mobile banking services. A request to participate in the study will be forwarded to the customer by the researcher, and upon agreeing the customer was given a questionnaire to fill.

3.6.2 Structured questionnaire

The data was collected using a structured questionnaire (Appendix I) with closed-ended questions. The questions were on a point Likert scale to measure the extent mobile banking has influenced personal financial savings. A survey questionnaire method was used to gather data regarding the affordability and convenience of mobile banking services. Also, the instrument was used to gather data on the ability of mobile banking to save time and to ensure the security of bank account holders’ money. The formulation of the structured questionnaires was considering the study's main rationale. The survey questionnaire was used to gather information from users of mobile banking services. This was used because it is suitable for the collection of lots of data in a short time; nevertheless, it provides the interviewee with free will to answer the questions asked by the interviewer. More vitally, a questionnaire simplifies the process of understanding and analysing data.
3.7 Data Analysis Plan

3.7.1 Data analysis methods

This anticipated study adopted Descriptive statistics and a multiple linear regression model for analysis as summarised in Table 1. Essentially, according to Kumari and Yadav (2018), the analysis of cross-sectional data for the most part is based on ordinary least squares linear regression models and descriptive statistics. Descriptive statistics mapped the degree or extent of mobile banking affordability, convenience, security and time-saving ability in Dodoma City. The multiple linear regression techniques were used to estimate the relationship between mobile banking’s affordability, time-saving, security and convenience on personal financial savings. To run regression analysis independent variables measured in a point Likert scale were entered in the regression model to estimate their link with the dependent variable ‘personal financial savings’ measured numerically.

A multiple linear regression model was used for the reason that it is a statistical technique that predicts the value of a dependent variable based on the values of two or more independent variables (Montgomery, Peck & Vining, 2012; Tranmer, Murphy, Elliot & Pampaka, 2020). The study comprises four independent variables ‘affordability, time-saving, security and convenience’. Also, linear regression analysis was applied because the dependent variable (personal savings) was continuously (or numerical) measured by the percentage change in the amount of money saved by mobile banking users. Also, the use of the regression model was mandated by the fact
that is a statistical tool that permits the most powerful and precise predictions of the relationship between independent and dependent variables.

### Table 1: Data Analysis Matrix

<table>
<thead>
<tr>
<th>Specific objectives</th>
<th>Variable/Measured aspect</th>
<th>Variable Measurement</th>
<th>Method of Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To assess the effect of convenience on personal financial savings</td>
<td>• Accessibility</td>
<td>Five Point Likert on a Scale of 1 to 5</td>
<td>1. Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td>• Reliability</td>
<td>1= Strongly Disagree</td>
<td>2. Multiple Linear Regression</td>
</tr>
<tr>
<td></td>
<td>• Ease of use</td>
<td>2= Disagree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Quick/fast service</td>
<td>3= Neutral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4= Agree</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5= Strongly Agree</td>
<td></td>
</tr>
<tr>
<td>2. To examine the influence of security on personal financial savings</td>
<td>• Protection of personal data</td>
<td>Five Point Likert on a Scale of 1 to 5</td>
<td>1. Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td>• PIN authentication</td>
<td>1= Strongly Disagree</td>
<td>2. Multiple Linear Regression</td>
</tr>
<tr>
<td></td>
<td>• Trust</td>
<td>2= Disagree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Secure transaction</td>
<td>3= Neutral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4= Agree</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5= Strongly Agree</td>
<td></td>
</tr>
<tr>
<td>3. To investigate the influence of affordability on personal financial savings</td>
<td>• Bank charges</td>
<td>Five Point Likert on a Scale of 1 to 5</td>
<td>1. Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td>• Transaction cost</td>
<td>1= Strongly Disagree</td>
<td>2. Multiple Linear Regression</td>
</tr>
<tr>
<td></td>
<td>• Ease of access</td>
<td>2= Disagree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Travel cost</td>
<td>3= Neutral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4= Agree</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5= Strongly Agree</td>
<td></td>
</tr>
<tr>
<td>4. To determine the influence of time-saving ability on personal financial savings</td>
<td>• Timely services</td>
<td>Five Point Likert on a Scale of 1 to 5</td>
<td>1. Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td>• Time used for the transaction</td>
<td>1= Strongly Disagree</td>
<td>2. Multiple Linear Regression</td>
</tr>
<tr>
<td></td>
<td>• Travel time to the bank</td>
<td>2= Disagree</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3= Neutral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4= Agree</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5= Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

**Source**: Own compilation, 2023

#### 3.7.2 Analytical Model

Multiple linear regression models were estimated to analyse the anticipated causal-effect relationship between mobile money variables and personal
financial savings. The linear regression model provided in equation (1) was utilised to estimate the regression coefficients for the first specific objective: to examine the influence of mobile banking convenience (accessibility) on personal savings.

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon \] ……………… (1)

Where;

\begin{align*}
Y &= \text{Personal savings (percentage change in savings amount)} \\
\beta_0 &= \text{Intercept (Constant)} \\
\beta_1 &= \text{Regression Coefficient of mobile banking accessibility,} \\
\beta_2 &= \text{Regression Coefficient of mobile banking reliability,} \\
\beta_3 &= \text{Regression Coefficient of ease of use of mobile banking,} \\
\beta_4 &= \text{Regression Coefficient of less effort needed to use mobile banking} \\
\beta_5 &= \text{Regression Coefficient of quick/fast service} \\
X_1 &= \text{Variable mobile banking accessibility} \\
X_2 &= \text{Variable mobile banking reliability} \\
X_3 &= \text{Variable ease of use of mobile banking,} \\
X_4 &= \text{Variable effort} \\
X_5 &= \text{Variable quick/fast service} \\
\varepsilon &= \text{Error term for the model}
\end{align*}

For the second specific objective, the linear regression model given in equation (2) below was adopted to determine the influence of mobile banking security on personal savings.

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon \] ……………… (2)
Where;

$Y$ = Personal savings (percentage change in savings amount)

$\beta_0$ = Intercept (Constant)

$\beta_1$ = Regression Coefficient of protection of personal data,

$\beta_2$ = Regression Coefficient of PIN authentication,

$\beta_3$ = Regression Coefficient of trust,

$\beta_4$ = Regression Coefficient of secure transactions

$\beta_5$ = Regression Coefficient of control over savings

$X_1$ = Variable protection of personal data

$X_2$ = Variable PIN authentication

$X_3$ = Variable trust

$X_4$ = Variable secure transactions

$X_5$ = Variable control over savings

$\epsilon$ = Margin of Error

The linear regression model given in equation (3) below was adopted for the third specific objective: to assess the influence of mobile banking affordability on personal savings

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$ ........................................... (3)

Where;

$Y$ = Personal savings (percentage change in savings amount)

$\beta_0$ = Intercept (Constant)

$\beta_1$ = Regression Coefficient of Bank charges

$\beta_2$ = Regression Coefficient of reduced transaction costs (internet services)
The linear regression model given in equation (4) below was adopted for the fourth specific objective: to investigate the influence of mobile banking time saving on personal savings.

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \]  

Where;

- \(Y\) = Personal savings (percentage change in savings amount)
- \(\beta_0\) = Intercept (Constant)
- \(\beta_1\) = Regression Coefficient of on-time service
- \(\beta_2\) = Regression Coefficient of no queuing at a bank
- \(\beta_3\) = Regression Coefficient of time taken is less
- \(\beta_4\) = Regression Coefficient of reduced travel time
- \(X_1\) = Variable timely service
- \(X_2\) = Variable no queuing at a bank
- \(X_3\) = Variable less transaction time
- \(X_4\) = Variable reduces travel time
- \(\varepsilon\) = Margin of error for the model
3.8 **Validity and Reliability**

The pre-testing and pilot study was conducted. The pre-testing solicited the opinions of different experts regarding wording, language, content and coverage of the topic in data collection tools. Then the recommendations provided by experts during pre-testing were used to improve the questionnaire. After that, the pilot study was conducted in Dodoma City in the street where actual data collection was not conducted on 20 randomly selected mobile banking users before the beginning of the real data collection. The pilot study will help to improve the reliability and validity of the survey instrument (questionnaire) before their final distribution to respondents. This insertion is also supported by Creswell (2014) and Issaya (2017). Moreover, Cronbach’s alpha coefficient was estimated to measure the reliability of research tools. A value of 0.7 and above is acceptable.

3.9 **Ethical Considerations**

The researcher abides by the research's ethical issues including reality and accurateness, confidentiality, plagiarism; avoiding data fabrications and other related issues. Also, before data collection researcher requested approval from the College of Business Education, the Region Administrative Secretary (RAS) of Dodoma Region and the City Executive Director of Dodoma City. Unauthorized persons/organisations have an opportunity to access the collected data. And collected data was solely used for academic purposes for writing a master's dissertation.
CHAPTER FOUR

4.0 FINDINGS AND DISCUSSION
The presentation and discussion of findings in this chapter are organised according to the specific objectives of the study, focusing on the impact of mobile banking on the personal savings of bank customers in Dodoma city who utilise mobile banking services.

4.1 Characteristics of Respondents
The study was attentive to the background of the respondents with consideration of gender, age, level of education, and experience in using mobile banking services.

4.1.1 Gender of Respondents
The findings in Table 2 indicate that most of the respondents (55.4%) were males. Females constituted 44.6%. However; there was at least one representation of both males and females in the study and these therefore reduced biased responses that are conditioned by one’s gender. The distribution of the gender findings was a result of bank customers using mobile banking services where males were compared to female customers.

Table 2: Gender of respondents (n=370)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>205</td>
<td>55.4</td>
</tr>
<tr>
<td>Female</td>
<td>165</td>
<td>44.6</td>
</tr>
</tbody>
</table>

Source: Field Data, 2023
4.1.2 Age of respondents

Results in Table 3 revealed that most of the respondents were between the ages of 31 and 45. This constituted 87.3% of the customers using mobile banking services in the selected banks. Respondents below the age of 31 represented 7% while those of ages 46 and above constituted only 5.7%. This implies that the younger generation is more interested in using new and emerging technologies like mobile banking services to conduct their banking transactions and personal savings.

Table 3: Age of respondents (n=370)

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30</td>
<td>26</td>
<td>7.0</td>
</tr>
<tr>
<td>31-45</td>
<td>323</td>
<td>87.3</td>
</tr>
<tr>
<td>46 and above</td>
<td>21</td>
<td>5.7</td>
</tr>
</tbody>
</table>

Source: Field Data, 2023

4.1.3 Level of Education

Findings in Table 4 revealed that respondents had different levels of education of which 14.3% had attained secondary level of education, 28.6% obtained the certificate level, 19.5% obtained the diploma level, and 37.6% attained the bachelor’s degree level. The findings revealed the highest level of education attained was the bachelor’s degree level followed by the certificate level, diploma level, and finally the secondary education level. This indicated that the respondents had a formal level of education which enabled them to effectively use mobile banking services for personal saving.
Table 4: Respondents level of education (n=370)

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary School</td>
<td>53</td>
<td>14.3</td>
</tr>
<tr>
<td>Certificate</td>
<td>106</td>
<td>28.6</td>
</tr>
<tr>
<td>Diploma</td>
<td>72</td>
<td>19.5</td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td>139</td>
<td>37.6</td>
</tr>
</tbody>
</table>

Source: Field Data, 2023

4.1.4 Experience in using mobile banking

Table 5 shows how long the respondents have been using the mobile banking services. The results revealed that 78.6% of the respondents have been using the mobile banking service for 1-5 years, 20.8% of the respondents have been using mobile banking services for less than a year while only 1 per cent of the respondents have been using the mobile banking services between 6 and 10 years. The findings imply that the range of 1-5 years has a high percentage of mobile banking users compared to other years. This is because the adoption and growth of the electronic banking technologies in Tanzania has improved.

Table 5: Experience of using mobile banking (n=370)

<table>
<thead>
<tr>
<th>Experience</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>77</td>
<td>20.8</td>
</tr>
<tr>
<td>1-5 years</td>
<td>291</td>
<td>78.6</td>
</tr>
<tr>
<td>6-10 years</td>
<td>2</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Field Data, 2023

4.2 Personal financial savings

To determine personal financial savings, the perceptions of the respondents were ranked on a Likert scale of 5 = strongly agree, 4 = agree, 3 = neutral, 2 =
disagree, and 1 = strongly disagree. The findings were presented and summarized in Table 6 using the mean score and standard deviation.

Table 6: Descriptive statistics of personal financial savings (n=370)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>Std. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am confident in my ability to consistently save a significant portion of my income</td>
<td>3.813</td>
<td>0.715</td>
</tr>
<tr>
<td>I actively create and follow a detailed budget to allocate a portion of my income toward savings</td>
<td>4.899</td>
<td>0.441</td>
</tr>
<tr>
<td>I have an adequate emergency fund saved, which could cover at least six months of my living expenses</td>
<td>3.677</td>
<td>0.216</td>
</tr>
<tr>
<td><strong>Overall score</strong></td>
<td><strong>4.13</strong></td>
<td><strong>0.457</strong></td>
</tr>
</tbody>
</table>

*Source: Field Data, (2023)*

Results in Table 6 revealed that respondents agree that they have confident in their ability to consistently save a significant portion of their income (mean score = 3.813). This implies that the saving rate was high. Moreover, respondents agree that they actively create and follow a detailed budget to allocate a portion of their income toward savings (mean score = 4.899). Additionally, Respondents agree that they have adequate emergency funds saved, which could cover at least six months of living expenses (mean score = 3.677). Furthermore, the overall mean score for personal financial savings was 4.13, this implies that the level of personal financial savings was high.
4.3 Influence of convenience on personal financial savings

4.3.1 Results for convenience

The study sought to determine the level of agreement with different statements relating to the influence of convenience on personal financial savings. The responses were summarized using mean and standard deviations and the results presented in Table 7

Table 7: Descriptive results of convenience

<table>
<thead>
<tr>
<th>Statement related to convenience</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can access mobile banking services at any time</td>
<td>4.04</td>
<td>0.727</td>
</tr>
<tr>
<td>It's simple to use mobile banking to make financial transactions</td>
<td>3.97</td>
<td>0.699</td>
</tr>
<tr>
<td>I use mobile banking to access and make transactions anywhere</td>
<td>4.18</td>
<td>0.986</td>
</tr>
<tr>
<td>Banking services are easily accessible through mobile banking compared to services at bank branch</td>
<td>3.72</td>
<td>0.764</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td><strong>3.98</strong></td>
<td><strong>0.794</strong></td>
</tr>
</tbody>
</table>

*Source: Field data, (2023)*

The results presented in Table 7 revealed the respondents agree that they can access mobile banking services at any time (mean = 4.04). The respondents also agreed that mobile banking services are simple to use mobile banking to make financial transactions (mean = 3.97). Moreover, respondents agree that
they use mobile banking to access and make transactions anywhere (mean = 4.18). Furthermore, respondents agree that banking services are easily accessible through mobile banking compared to services at bank branches (mean = 3.72). The overall mean score was 3.98, findings imply that the mobile banking service convenience was high.

4.3.2 Results for convenience and personal financial savings

This section presented the inferential statistics results for convenience and personal financial savings. To attain this study multiple linear regression analyses were employed to test the significant relationship between independent (accessibility, reliability, ease of use and quick/fast service and dependent variables (personal financial savings).

Results in Table 7 show the amount of variation in the dependent variable explained by the independent variable. The independent variable reported $R^2=0.858$ which means that 84.9% of corresponding variations in personal financial savings. The result implied that the model explained well the relationship between the convenience of mobile banking and personal financial savings by 84.9% and the rest of the variation 15.1% can be explained by another model.

The ANOVA results indicated a level of significance of 0.001 and the F test gave a value of $F = 89.658$ which is relatively large enough to support the goodness of fit model. This implied that the model is significant in
demonstrating that the convenience of mobile banking is a useful predictor of personal financial savings.

**Table 8: Regression coefficients for convenience and personal financial savings**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.722</td>
<td>0.134</td>
<td>12.845</td>
<td>0.000</td>
</tr>
<tr>
<td>Accessibility</td>
<td>0.663</td>
<td>0.152</td>
<td>4.366</td>
<td>0.000</td>
</tr>
<tr>
<td>Reliability</td>
<td>0.109</td>
<td>0.147</td>
<td>2.744</td>
<td>0.039</td>
</tr>
<tr>
<td>Ease of use</td>
<td>0.113</td>
<td>0.134</td>
<td>1.096</td>
<td>0.024</td>
</tr>
<tr>
<td>Quick/fast service</td>
<td>0.215</td>
<td>0.103</td>
<td>2.278</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Dependent Variable: Personal financial savings

**R-square =** 0.858

**F-value** = (89.65, P-value < 0.05)

Moreover, findings in Table 8 revealed that accessibility of mobile banking services was found positive and significantly related to personal financial savings (B 0.663, P-value =0.000). The findings imply that any unit increase in accessibility of mobile banking will result in to increase in personal financial savings by 66.3%.

Furthermore, findings in Table 8 revealed that the reliability of mobile banking services was found positive and significantly related to personal financial savings (B= 0.109, P-value =0.039). The findings imply that any unit
increase in the reliability of mobile banking will result in to increase in personal financial savings by 10.9%.

Likewise, findings in Table 7 revealed that ease of use of mobile banking services was found positive and significantly related to personal financial savings (B= 0.113, P-value =0.024). The findings imply that any unit increase in ease of use of mobile banking will result in to increase in personal financial savings by 11.3%.

Additionally, findings in Table 8 revealed that quick/fast service of mobile banking services was found positive and significantly related to personal financial savings (B= 0.215, P-value =0.006). The findings imply that any unit increase in quick/fast service of mobile banking will result in to increase in personal financial savings by 21.5%.

The study findings related to those of Shankar & Rishi (2020) revealed that access convenience, transaction convenience, and possession/post-possession convenience predict m-banking adoption intention, with the powerful predictor being possession/post-possession convenience.

Likewise, Mararo (2018) established that mobile money bestows user convenience and a sense of safety since people travel around freely together with their own virtual money bearing in mind that they can withdraw or take out hard cash from their bank account anytime they want at anyplace they are at a lower cost.

World Bank (2012) declares that mobile money is considered sufficiently liquid to allow easy and fast conversion of assets to cash. The mobile phones
allow the customer to use electronic credits for other transactions like paying
bills, purchasing goods at shops, supermarkets and virtual stores, purchasing
airtime, to making direct e-transfers of money to mobile phone accounts from
certain bank accounts banks, which have already set up systems to perform
that function.

4.4 Influence of Security of Mobile Banking on Personal Financial Savings

4.4.1 Results for security

The study sought to determine the level of agreement with different
statements relating to the security of mobile banking on personal financial
savings. The responses were summarized using mean and standard deviations
and the results presented in Table 9
Table 9: Descriptive results of security

<table>
<thead>
<tr>
<th>Statement related to security</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank has effective means to protect data in mobile banking transmission and integrity</td>
<td>3.88</td>
<td>0.796</td>
</tr>
<tr>
<td>Every time you want to access your account a password or PIN authentication is required</td>
<td>3.95</td>
<td>0.791</td>
</tr>
<tr>
<td>I trust mobile banking</td>
<td>4.11</td>
<td>0.541</td>
</tr>
<tr>
<td>I believe that banks adopted mobile banking to increase the security of transactions</td>
<td>3.83</td>
<td>0.321</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td><strong>3.94</strong></td>
<td><strong>0.612</strong></td>
</tr>
</tbody>
</table>

Source: Field data, (2023)

The results presented in Table 9 revealed the respondents agree that bank has effective means to protect data in mobile banking transmission and integrity (mean = 3.88). The respondents also agreed that every time they want to access their accounts a password or PIN authentication is required (mean = 3.95). Moreover, respondents agree that they trust mobile banking (mean = 4.11). Furthermore, respondents agree that they believe that banks adopted mobile banking to increase the security of transactions (mean = 3.83). The overall mean was 3.94 implying that the security of mobile banking was high.
4.4.2 Results for security of mobile banking and personal financial savings

This section presented the results of the inferential statistics for the security of mobile banking and personal financial savings. To attain this study multiple linear regression analyses were employed to test the significant relationship between independent (protection of personal data, PIN authentication, trust and secure transaction) and dependent variables (personal financial savings).

Results in Table 10 show the amount of variation on the dependent variable explained by the independent variable. The independent variable reported $R^2=0.816$ which means that 81.6% of corresponding variations in personal financial savings. The result implied that the model explained well the relationship between the security of mobile banking and personal financial savings by 81.6% and the rest of the variation 18.4% can be explained by another model.

The ANOVA results indicated a level of significance of 0.000 and the F test gave a value of $F = 95.27$ which is relatively large enough to support the goodness of fit model. This implied that the model is significant in demonstrating that the security of mobile banking is a useful predictor of personal financial savings.
Table 10: Regression coefficients for security of mobile banking and personal financial savings

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.689</td>
<td>0.119</td>
<td>14.224</td>
<td>0.000</td>
</tr>
<tr>
<td>Protection of personal data</td>
<td>0.184</td>
<td>0.107</td>
<td>1.710</td>
<td>0.011</td>
</tr>
<tr>
<td>PIN authentication</td>
<td>0.206</td>
<td>0.101</td>
<td>2.043</td>
<td>0.042</td>
</tr>
<tr>
<td>Trust</td>
<td>0.132</td>
<td>0.078</td>
<td>5.501</td>
<td>0.000</td>
</tr>
<tr>
<td>Secure transaction</td>
<td>0.231</td>
<td>0.188</td>
<td>1.336</td>
<td>0.021</td>
</tr>
</tbody>
</table>

Dependent Variable: Personal financial savings

R-square = 0.816

F-value = (95.27, P-value < 0.05)

Findings in Table 10 revealed that the protection of personal data within mobile banks was found positive and significantly related to personal financial savings (B = 0.184, P-value = 0.011). The findings imply that any unit increase of protection of personal data within mobile banks will result in an increase in personal financial savings by 18.4%.

Furthermore, findings in Table 10 revealed that PIN authentication within mobile banking services was found positive and significantly related to personal financial savings (B = 0.206, P-value = 0.042). The findings imply that...
any unit increase in PIN authentication within mobile banking will result in to increase in personal financial savings by 20.6%.

Likewise, findings in Table 10 revealed that trust in mobile banking services was found positive and significantly related to personal financial savings (B= 0.132, P-value =0.000). The findings imply that any unit increase in customer/user trust in mobile banking will result in to increase in personal financial savings by 13.2%.

Additionally, findings in Table 10 revealed that secure transaction of mobile banking services was found positive and significantly related to personal financial savings (B= 0.231, P-value =0.021). The findings imply that any unit increase in secure transactions of mobile banking will result in to increase in personal financial savings by 23.1%.

This finding is in line with Macharia & Okunoye (2013) who suggested that mobile money is the safest way of saving personal financial resources. However, the behaviour of saving financial resources in non-pecuniary forms for instance animals and grains was not influenced by the adoption of electronic money in the countryside settlements where it was highly done. The studies on the impact of Mpesa in Kenya that were conducted by Mbiti and Weil (2014), as well as Mothiora (2015), arrived at an analogous outcome that mobile money is safer for savings.
4.5 Influence of affordability of Mobile Bank on personal financial savings

4.5.1 Result for Affordability

The study sought to determine the level of agreement with different statements relating to the affordability of personal financial savings. The responses were summarized using mean and standard deviations and the results presented in Table 11.

Table 11: Descriptive results of Affordability

<table>
<thead>
<tr>
<th>Statement related to affordability</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer costs of accessing banking services are low with mobile banking</td>
<td>2.27</td>
<td>0.936</td>
</tr>
<tr>
<td>I use mobile banking service to make transactions because it is less costly</td>
<td>1.81</td>
<td>0.797</td>
</tr>
<tr>
<td>It is easy to access a bank account using a mobile banking system.</td>
<td>4.04</td>
<td>0.601</td>
</tr>
<tr>
<td>The use of a mobile banking system reduces travel and accommodation costs</td>
<td>3.92</td>
<td>0.149</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td>3.01</td>
<td>0.621</td>
</tr>
</tbody>
</table>

*Source: Field data, (2023)*

The results presented in Table 11 revealed the respondents disagree that customer costs of accessing banking services are low with mobile banking (mean = 2.27). The respondents also disagree with the use of mobile banking services to make transactions because it is less costly (mean = 1.81). Moreover, respondents agree that it is easy to access bank accounts using a mobile banking system. (Mean = 4.04). Furthermore, respondents agree that
the use of a mobile banking system reduces travel and accommodation costs (mean = 3.92). The overall mean was 3.01 implying that, the affordability of mobile banking service was moderate in terms of service cost.

4.5.2 Results for affordability of mobile banking and personal financial savings

This section presented the inferential statistics results for the affordability of mobile banking and personal financial savings. To attain this study multiple linear regression analyses were employed to test the significant relationship between independent (Bank charges, transaction cost, ease of access and travel cost) and dependent variables (personal financial savings).

Results in Table 12 show the amount of variation in the dependent variable explained by the independent variable. The independent variable reported R²=0.734 which means that 73.4% of corresponding variations in personal financial savings. The result implied that the model explained well the relationship between the affordability of mobile banking and personal financial savings by 73.4% and the rest of the variation 26.6% can be explained by another model.

The ANOVA results indicated a level of significance of 0.000 and the F test gave a value of F = 72.13 which is relatively large enough to support the goodness of fit model. This implied that the model is significant in demonstrating that the affordability of mobile banking is a useful predictor of personal financial savings.
Moreover, findings in Table 12 revealed that the bank charge of the mobile bank was found negative and significantly related to personal financial savings (B= -0.124, P-value =0.014). The findings imply that any unit decrease in bank charge of mobile bank will result in to increase in personal financial savings by 12.4%.

Furthermore, findings in Table 12 revealed that the transaction cost of mobile banking services was found negative and significantly related to personal financial savings (B -0.382, P-value =0.000). The findings imply that any unit decrease in the transaction cost of mobile banking will result in to increase in personal financial savings by 38.2%.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.899</td>
<td>0.101</td>
<td>18.840</td>
<td>0.000</td>
</tr>
<tr>
<td>Bank charges</td>
<td>-0.124</td>
<td>0.099</td>
<td>-1.254</td>
<td>0.014</td>
</tr>
<tr>
<td>Transaction cost</td>
<td>-0.382</td>
<td>0.102</td>
<td>-3.742</td>
<td>0.000</td>
</tr>
<tr>
<td>Ease of access</td>
<td>0.215</td>
<td>0.105</td>
<td>2.045</td>
<td>0.044</td>
</tr>
<tr>
<td>Travel cost</td>
<td>0.324</td>
<td>0.136</td>
<td>2.388</td>
<td>0.120</td>
</tr>
</tbody>
</table>

**R-square** = 0.734

**F-value** = (72.13, P-value < 0.05)
Likewise, findings in Table 10 revealed that ease of access to mobile banking services was found positive and significantly related to personal financial savings (B= 0.215, P-value =0.044). The findings imply that any unit increase in ease of access to mobile banking will result in an increase in personal financial savings by 21.5%.

Additionally, findings in Table 12 revealed that the travel cost of mobile banking services was found positive and insignificant related to personal financial savings (B= 0.324, P-value =0.120). The findings imply that transaction costs did not play an important role in personal financial savings. The study findings related to those of Richard and Mandarin (2017) the findings of the study revealed that for customers to use mobile banking it has to be easy to use, and affordable.

4.6 Influence of time-saving on personal financial savings

4.6.1 Results for time saving

The study sought to determine the level of agreement with different statements on the time saving on personal financial savings. The responses were summarized using mean and standard deviations and the results presented in Table 13
Table 13: Descriptive results of time-saving

<table>
<thead>
<tr>
<th>Statement of time-saving</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transactions via mobile banking take less time than offline at the bank</td>
<td>4.26</td>
<td>0.825</td>
</tr>
<tr>
<td>It takes a considerable amount of time to transact at the bank branch than transacting with the mobile money services/system</td>
<td>4.01</td>
<td>0.186</td>
</tr>
<tr>
<td>With mobile banking, you save travelling time to the bank</td>
<td>3.75</td>
<td>0.904</td>
</tr>
<tr>
<td><strong>Overall mean</strong></td>
<td><strong>4.01</strong></td>
<td><strong>0.638</strong></td>
</tr>
</tbody>
</table>

**Source:** Field data, (2023)

The results presented in Table 13 revealed the respondents agree that transactions via mobile banking take less time than offline at the bank (mean = 4.26). The respondents also agree that it takes a considerable amount of time to transact at the bank branch than transacting with the mobile money services/system (mean = 4.01). Moreover, respondents agree that with mobile banking, they can save travelling time to the bank (mean = 3.75). The overall mean was 4.01 implying that, to a high extent mobile banking services save time.

4.6.2 Results for time-saving of mobile banking and personal financial savings

This section presented the results of the inferential statistics for time-saving mobile banking and personal financial savings. To attain this study multiple
linear regression analyses were employed to test the significant relationship between independent variables (timely services, time used for transaction and travel time to bank) and dependent variables (personal financial savings). Results in Table 14 show the amount of variation in the dependent variable explained by the independent variable. The independent variable reported $R^2=0.808$ which means that 80.8% of corresponding variations in personal financial savings. The result implied that the model explained well the relationship between time-saving of mobile banking and personal financial savings by 80.8% and the rest of the variation 19.2% can be explained by another model.

The ANOVA results indicated a level of significance of 0.002 and the F test gave a value of $F = 51.6$ which is relatively large enough to support the goodness of fit model. This implied that the model is significant in demonstrating that the time-saving of mobile banking is a useful predictor of personal financial savings.
Table 14: Regression coefficients for time-saving of mobile banking and personal financial savings

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>4.624</td>
<td>0.023</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Timely services</td>
<td>0.144</td>
<td>0.031</td>
<td>0.132</td>
<td>1.438</td>
</tr>
<tr>
<td>Time used for the transaction</td>
<td>0.137</td>
<td>0.121</td>
<td>0.122</td>
<td>4.480</td>
</tr>
<tr>
<td>Travel time to the bank</td>
<td>0.176</td>
<td>0.234</td>
<td>0.151</td>
<td>3.367</td>
</tr>
</tbody>
</table>

Dependent Variable: Personal financial savings

**R-square** = 0.808

**F-value** = (51.613, P-value < 0.05)

Furthermore, findings in Table 14 revealed that timely services of the mobile bank were found positive and significantly related to personal financial savings (B= 0.144, P-value =0.021). The findings imply that any unit increase in the timely service of mobile banks will result in to increase in personal financial savings by 14.4%.

Furthermore, findings in Table 14 revealed that time used for the transaction of mobile banking services was found positively and significantly related to personal financial savings (B= 0.176, P-value =0.000). The findings imply that any unit increase in time used for transactions using mobile banking will result in to increase in personal financial savings by 17.6%. The study findings correspond with Purohit and Arora (2021) found that the advantages
of mobile banking included time-saving. The results are also in line with Mararo (2018) who found that mobile money is time-saving and is positively related to SME growth. Also, Kalei et al. (2016) found that mobile money saves time that could have been spent at the long queues in the bank.
CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

This section summarizes the research findings and draws some conclusions and recommendations on the impact of mobile banking on the personal savings of bank customers using mobile banking.

5.1 Summary of Findings

To determine the influence of convenience on personal financial savings, results revealed the respondents agree that they can access mobile banking services at any time. The respondents also agreed that mobile banking services are simple to use mobile banking to make financial transactions. Moreover, respondents agree that they use mobile banking to access and make transactions anywhere. Furthermore, respondents agree that banking services are easily accessible through mobile banking compared to services at bank branches.

To determine the influence of security on personal financial savings, the results revealed the respondents agree that bank has effective means to protect data in mobile banking transmission and integrity. The respondents also agreed that every time they want to access their accounts a password or PIN authentication is required. Moreover, respondents agree that they trust mobile banking. Furthermore, respondents agree that they believe that banks adopted mobile banking to increase the security of transactions.

To determine the influence of affordability on personal financial savings, The results revealed the respondents disagree that customer costs of accessing
banking services are low with mobile banking. The respondents also disagree with the use of mobile banking services to make transactions because it is less costly. Moreover, respondents agree that it is easy to access bank accounts using a mobile banking system. Furthermore, respondents agree that the use of mobile banking systems reduces travel and accommodation costs. The overall findings imply that the mobile banking service was not affordable in terms of service cost.

To determine the influence of time-saving ability on personal financial savings, The results revealed the respondents agree that Transactions via mobile banking take less time than offline at the bank. The respondents also agree that it takes a considerable amount of time to transact at the bank branch than transacting with the mobile money services/system. Moreover, respondents agree that, with mobile banking, they can save travelling time to the bank.

5.2 Conclusions of the study

The study found that convenience has a positive and significant relation to personal financial savings. The study concludes that the convenience of mobile banking has a positive impact on personal financial savings in Dodoma City.

The study found that security has a positive and significant relation to personal financial savings. The study concludes that the security of mobile banking has a positive influence on personal financial savings in Dodoma City.
The study found that the affordability of mobile banking has a positive and insignificant relation to personal financial savings. The study concludes that the affordability of mobile banking does not influence personal financial savings in Dodoma City.

The study found that time-saving mobile banking has a positive and significant relation to personal financial savings. The study concludes that mobile banking saves time on personal financial savings in Dodoma city.

5.3 Recommendations of the study

Based on the findings, the following recommendations have been given

i. To enhance the convenience of mobile banking for personal financial savings, banks should implement biometric authentication methods such as fingerprint or facial recognition. This would eliminate the need for remembering and inputting complex passwords, making it easier and faster for users to access their accounts securely. Biometric authentication provides a seamless and secure way to log in, reducing friction and improving the overall convenience of mobile banking.

ii. Multi-Factor Authentication (MFA) Enhancements To bolster the security of mobile banking, banks should strengthen their multi-factor authentication (MFA) systems. Implementing MFA enhancements, such as utilizing one-time passwords sent via secure channels like SMS or mobile apps, or introducing biometric authentication as a second factor, can significantly reduce the risk of unauthorized access
to personal financial savings. Banks should also educate users about the importance of regularly updating their MFA settings and encourage the use of strong, unique passwords.

iii. Fee Transparency and Lower Cost Options to improve the affordability of mobile banking for personal financial savings, banks should prioritize fee transparency. They should communicate all fees associated with mobile banking services, including transaction fees, monthly account maintenance fees, and ATM withdrawal charges. Additionally, banks should offer lower-cost or fee-free mobile banking account options to cater to customers with varying financial needs. By making the fee structure more transparent and providing affordable account options, banks can ensure that mobile banking remains accessible and cost-effective for all customers.

iv. Enhanced Automation and Personalization To save users more time when managing their financial savings through mobile banking, banks should invest in advanced automation and personalization features. Implementing features such as automated bill pay, expense tracking, and personalized financial insights can help users streamline their financial tasks and make informed decisions more efficiently. Additionally, banks can use predictive analytics to offer tailored product recommendations and financial advice, further optimizing the time-saving potential of mobile banking for personal financial management.
5.4 Suggestion for Further Research

i. Other studies should be done in another region in Tanzania for findings generalization.

ii. The study was limited to the quantitative method, another study should be undertaken to employ qualitative methods like interviews and focus group discussions to validate the quantitative methods.

iii. The study was also limited to four factors that affect mobile banking on personal financial savings. Another study should be undertaken to explore other factors rather than, convenience, affordability, time-saving and cost.
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APPENDICES

APPENDIX I: STRUCTURED QUESTIONNAIRE

RESEARCH TITLE:
TO ANALYSE THE EFFECT OF MOBILE BANKING ON THE PERSONAL SAVINGS OF BANK CUSTOMERS USING MOBILE BANKING

Dear respondent,
I am a student pursuing a Master’s degree in Business Administration in Banking and Finance at the College of Business Education (CBE). This research is part of the completion requirements for the master's degree that I undertake. The research study is titled “To Analyse the effect of mobile banking on personal savings of bank customers using mobile banking”. The information you provide is intended for academic purposes and not otherwise. The researcher will treat this information confidentially. By completing this questionnaire, you will be making an important contribution to the debate about the impact of mobile banking on the personal savings of bank customers using mobile banking.

Instructions:
• You are required to put [√] in the box provided in each statement/sentence OR fill in the blanks.
• You are allowed to excuse yourself at any time

GENERAL INFORMATION
Questionnaire No……………………………………………….
Location...............................................
Date …………………………………………………………….

SECTION A: DEMOGRAPHIC INFORMATION
1. Sex
   i. Male
   ii. Female
2. How old are you? .................................. (Years)
3. The highest level of education you have attained so far
   i. Primary
   ( )
ii. Secondary  
iii. Diploma/certificate  
iv. Bachelor  
v. Masters  
vi. PhD  
vii. Others Specify

4. Experience with Mobile Banking
   i. Less than 1 year  
   ii. 0-5 years  
   iii. 6-10 years  
   iv. 10+ years

5. What is your Bank [tick your bank(s)]
   i. CRDB Bank  
   ii. NMB Bank
SECTION B: CONVENIENCE OF MOBILE BANKING AND PERSONAL FINANCIAL SERVICES AMONG BANK CUSTOMERS

6. Please rank the following statements as applied in the analytical review of the impact of the convenience of mobile banking on personal financial services for bank customers. Provide √ a tick where appropriate in the given 5-point Likert scale statements: 1. strongly disagree (SDAG) 2. Disagree (DAG) 3. Neither agrees nor disagrees/neutral (NAND) 4. Agree (AG) 5. Strongly agree (SAG).

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<tbody>
<tr>
<td>I can access mobile banking services at any time</td>
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<tr>
<td>It's simple to use mobile banking to make financial transactions</td>
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<td>The transaction on the mobile banking platform is simple for me to complete</td>
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<td>Transactions I've had done via mobile banking platform have been quickly resolved/completed</td>
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<tr>
<td>I use mobile banking to access and make transactions anywhere</td>
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<tr>
<td>With mobile banking, there is no need to go to the bank to deposit money</td>
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<tr>
<td>Less effort is used to transact online</td>
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<tr>
<td>Banking services are easily accessible through mobile banking compared to services at the bank branch</td>
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</table>
SECTION C: MOBILE BANKING SECURITY AND PERSONAL FINANCIAL SAVINGS AMONG BANK CUSTOMERS

7. Please rank the following statements as applied in the analysis of the impact of the security of mobile banking on personal financial services for bank customers. Provide a tick where appropriate in the given 5-point Likert scale statements: 1. strongly disagree (SDAG) 2. Disagree (DAG) 3. Neither agrees nor disagrees/neutral (NAND) 4. Agree (AG) 5. Strongly agree (SAG).

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<tr>
<td>Bank has effective means to protect data transmission and integrity</td>
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<tr>
<td>Access to your bank data is well controlled by a bank against cyber-attacks</td>
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<tr>
<td>Every time you want to access your account a password or PIN authentication is required</td>
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<tr>
<td>The bank regularly reminds me to change my password or PIN</td>
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<tr>
<td>Bank has frequently reminded me not to share my PIN/password with anyone</td>
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<tr>
<td>Do you have a positive view or perception toward mobile banking security?</td>
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<tr>
<td>I believe the use of mobile banking ensures the security of money</td>
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<tr>
<td>I trust mobile banking</td>
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<tr>
<td>I believe that banks adopted mobile banking to increase the security of transactions</td>
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<tr>
<td>I am satisfied with the use of mobile banking to deposit money in my savings account</td>
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<tr>
<td>I have control over my money via the mobile banking system</td>
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SECTION D: AFFORDABILITY (COST REDUCTION) OF MOBILE BANKING AND PERSONAL FINANCIAL SAVINGS AMONG BANK CUSTOMERS

8. Please rank the following statements as applied in the analysis of the impact of the affordability of mobile banking on personal financial services for bank customers. Provide √ a tick where appropriate in the given 5-point Likert scale statements: 1. strongly disagree (SDAG) 2. Disagree (DAG) 3. Neither agrees nor disagrees/neutral (NAND) 4. Agree (AG) 5. Strongly agree (SAG)

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<tr>
<td>Customer costs of accessing banking services are low with mobile banking</td>
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<tr>
<td>It is easy to access a bank account using a mobile banking system wherever you are</td>
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<tr>
<td>I prefer bank to bank than bank to SIM due to the associated cost</td>
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<tr>
<td>Transactions at the bank branch cost more than mobile banking/I use mobile banking service to make transactions because it is less costly</td>
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<tr>
<td>The use of a mobile banking system reduces travel and accommodation costs</td>
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<tr>
<td>Mobile banking reduces transaction costs of savings</td>
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</table>
SECTION E: TIME-SAVING ABILITY OF MOBILE BANKING AND PERSONAL FINANCIAL SAVINGS AMONG BANK CUSTOMERS

9. Please rank the following statements as applied in the analysis of the impact of mobile banking timesaving ability on personal financial services for bank customers. Provide a tick where appropriate in the given 5-point Likert scale statements: 1. strongly disagree (SDAG) 2. Disagree (DAG) 3. Neither agrees nor disagrees/neutral (NAND) 4. Agree (AG) 5. Strongly agree (SAG)

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<tr>
<td>Transactions via mobile banking take less time than offline at the bank</td>
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<tr>
<td>With mobile banking, you save travelling time to the bank</td>
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<td>Transactions via the mobile banking system are quickly completed</td>
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<tr>
<td>Mobile banking facilitates the timely delivery of customer payments</td>
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<tr>
<td>I have real-time access to bank information with regard to my savings account</td>
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<tr>
<td>It takes a considerable amount of time to transact at the bank branch than transacting with the mobile money services/system</td>
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<tr>
<td>Mobile banking is preferable to visiting the bank due to its accessibility</td>
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SECTION F: PERSONAL FINANCIAL SAVINGS AMONG BANK CUSTOMERS

10. Please rank the following statements as applied in the analytical review of the personal financial services for bank customers. Provide √ a tick where appropriate in the given 5-point Likert scale statements: 1. strongly disagree (SDAG) 2. Disagree (DAG) 3. Neither agrees nor disagrees/neutral (NAND) 4. Agree (AG) 5. Strongly agree (SAG).

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<tr>
<td>I am confident in my ability to consistently save a significant portion of my income</td>
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<tr>
<td>I actively create and follow a detailed budget to allocate a portion of my income toward savings</td>
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<tr>
<td>I have an adequate emergency fund saved, which could cover at least six months of my living expenses</td>
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11. Has mobile banking helped you increase financial savings?

1. YES [ ]

2. NO [ ]

12. How much do you save per month/year CURRENTLY .............................................

.........................................................., and how much did you save per month/year BEFORE using mobile banking.................................................................

THANK YOU FOR YOUR TIME