THE INFLUENCE OF DIGITAL FINANCIAL INCLUSION ON FINANCIAL HEALTH IN UGANDA

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Declaration

I, **Igoda Sarah**, hereby certify that this dissertation is my original work and has been submitted in partial fulfillment of the requirements for the award of the Bachelor degree of Science in Accounting and Finance at Uganda Christian University. It has not been submitted to any other academic institution for any award. Where the work of others has been used, it has been duly acknowledged through proper citations and clear references.

Signature..... **Date:** 16/04/2026.....

Igoda Sarah

Approval

This Dissertation titled "The Influence of Digital Financial Inclusion on Financial Health in Uganda" has been submitted for examination with the approval of my supervisor.

Signature: ..... **Date:** Tue: 14 Apr.7 2026

Simon Peter Mukisa.

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ABSTRACT

This study examines the influence of digital financial inclusion on financial health in Uganda using data from the FinScope 2023 survey. Financial health is measured as the ability of individuals to meet financial obligations, manage shocks, and maintain financial stability, while digital financial inclusion is captured through access and usage of digital financial services. The study further incorporates demographic characteristics such as income, education, and location to account for heterogeneity across individuals.

The analysis employs descriptive statistics, chi-square tests, and regression techniques, including a Linear Probability Model (LPM), to examine the relationship between digital financial inclusion and financial health. The results show that although access to digital infrastructure such as mobile phones and internet services is relatively high, the usage of digital financial services remains uneven, with a significant proportion of individuals not actively engaging with these services.

The findings reveal a strong and statistically significant relationship between digital financial inclusion and financial health. Individuals who use digital financial services are significantly more likely to be financially healthy compared to those who do not use such services. The regression results further indicate that engagement in digital financial services reduces the likelihood of poor financial health outcomes, suggesting that usage plays a critical role in improving financial well-being. However, the results also highlight disparities in usage, indicating that not all individuals equally benefit from digital financial inclusion.

The study concludes that digital financial inclusion has the potential to improve financial health in Uganda, but its effectiveness depends on active usage rather than access alone. To enhance financial well-being, policies should focus on promoting digital financial literacy, improving affordability and reliability of services, and encouraging inclusive participation in digital financial systems.

Keywords: Digital Financial Inclusion, Financial Health, Financial Well-being, FinScope, Uganda

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CHAPTER ONE: INTRODUCTION

1.0 Introduction

1.0 Introduction

This paper analyzes the impact of digital financial inclusion on financial health in Uganda based on a data set of nationally representative data of the FinScope 2023 survey. The chapter gives the background to the study, problem statement, objectives, research questions, hypotheses, scope, significance, justification, limitations and conceptual framework that the study will be conducted..

1.1 Background of the Study

Digital technologies have transformed the way people access and use financial services around

the world due to the transformation of financial systems by digital technologies. In the last 20 years, the phenomenon of digital financial inclusion (the utilization of mobile phones, the Internet, and electronic payment systems to get access to financial services) has become one of the main factors contributing to the economic inclusion and poverty reduction in the global context (Demirgüç-Kunt et al., 2018; World Bank, 2022). Traditional barriers to accessing financial services, including the high transaction costs, geographical distance, and the presence of strict documentation, have been weakened through digital financial services, offering a wider range of people the possibility of accessing financial services. Nevertheless, recent indicators across the globe have indicated that the greater access to financial services does not necessarily lead to better financial welfare, thus the idea of financial health as a more holistic gauge of welfare has gained popularity (CFPB, 2015; Financial Health Network, 2020; Brüggen et al., 2017).

Digital financial inclusion in developing countries and especially in Sub-Saharan Africa has been transformative in increasing financial access. Mobile phones have penetrated the region, and there is a lack of traditional banking infrastructure, making it a global leader in mobile money adoption (Jack & Suri, 2016; GSMA, 2021). Through digital financial services in Africa, people are able to send and receive money, save and transact more effectively, thus facilitating financial inclusion and benefiting household wellbeing (Aker et al., 2016; Suri and Jack, 2016). With this advancement, there has been evidence that most of the users are mainly engaged in basic transactional services as opposed to more sophisticated financial services like saving and investment. This makes the overall effect of digital financial inclusion on financial health disproportionate among the population, though structural constraints of low financial literacy, affordability limitations, and lack of trust still hold down its potential (World Bank, 2022).

Digital financial inclusion in Uganda has been on an accelerating trend, a trend that has been mostly fuelled by the growth of mobile money services. The FinScope Uganda 2023 survey reveals that a considerable share of adult populations have access to digital financial services and utilize them to engage in financial transactions like money transfers, paying bills, and simple savings. This has made Uganda one of the best digital financial markets in East Africa. Nevertheless, in spite of this development, financial health outcomes are poor. It has been proven that not all Ugandans can afford to sustain savings, deal with unplanned costs, and enjoy financial security, which implies that there is no dependence between the availability of digital

financial services and the financial health (FinScope Uganda, 2023; World Bank, 2022).

This paradox poses some insightful questions on whether the financial inclusion on a digital platform can be equivalent to better financial health or it may be just a convenience in conducting transactions and not improve welfare in the long-run. It is against this backdrop that this research paper explores the impact of digital financial inclusion on financial health in Uganda based on the latest nationally representative data.

1.2 Problem Statement.

Although digital financial inclusion has grown fast and more so in Sub-Saharan Africa, its effects on the financial well-being of individuals are not well understood. Although the provision of digital financial services has greatly enhanced access to financial systems, due to the decrease in transaction costs and the geographical boundaries, recent research indicates that the growing access may not lead to great financial health outcomes (World Bank, 2022; Demirguc-Kunt et al., 2018). Even after being financially included, many are still financially vulnerable, and unable to afford day-to-day costs, deal with financial shocks and stay financially stable in the long-term.

Digital financial inclusion in Sub-Saharan Africa and Uganda, in particular have increased at a high rate due to the popularity of mobile money services. The survey of FinScope Uganda 2023 showed that a substantial number of the population are covered by digital financial services. This widening of access has however not been accompanied by improvements in financial health. Many people still face financial stress and low savings and exposure to income shocks, which suggests a lack of interaction between financial inclusion and real financial well-being.

The current research on the topic in the region has predominantly dealt with the topic of access to financial services and their contribution to financial inclusion, with limited attention paid to the impact of such services on the financial health outcomes (Suri & Jack, 2016; Bongomin et al., 2017). Moreover, the majority of empirical studies have focused on the use of ownership and access predictors whereas the significance of the level of use and involvement in the use of digital financial services as a determinant of financial well-being have been ignored. This leaves a gaping hole in the knowledge on whether digital financial inclusion actually leads to a better financial health or just creates more access but with no significant welfare benefits.

Thus, the study aims to analyze how digital financial inclusion impacts financial health in Uganda based on the recent countrywide representative data. The research will offer empirical data on whether digital financial inclusion leads to better financial well-being by emphasizing on

access and usage of digital financial services to inform policymaking and practice in Uganda and other developing economies

1.3 Purpose of the Study

This study aims to explore the impact of digital financial inclusion on financial health of adults in Uganda based on FinScope 2023 data.

1.4 The study aims to achieve the following objectives:

The study is guided by the following objectives:I. To investigate how access to digital banks can impact financial well-being in Uganda.

I. To examine the influence of access to digital financial services on financial health in Uganda.

II. To determine the effects of using digital financial services on financial health in Uganda.

III. To analyze the influence of affordability and reliability of digital financial services on financial health in Uganda.

1.6 Study Hypotheses.

The hypothesis of the study are as follows:I. H1: There is a huge impact of access to digital financial services on financial health.

I. H1: Access to digital financial services has a significant effect on financial health.

II. H2: There is a strong impact of usage of digital financial services on financial health.

III. H3: Financial health is strongly impacted by affordability and reliability of digital financial services.

The scope of the study is as follows:

The paper will be dealing with Uganda based on nationally representative survey data of the FinScope 2023 survey that includes more detailed information on access to and the use of digital financial services and measures of financial well-being among adults. This paper particularly focuses on how the digital financial inclusion, which can be measured by access, use, and affordability and reliability of digital financial services, is related to financial health outcomes, such as the capacity to meet daily financial commitments, respond to shocks, and have sustainable levels of debts. It restricts its examination to the individual-level financial behavior and does not examine macroeconomic variables like the performance of the financial sector in a nation and the institutional policy process to ensure it is in tandem with micro-level financial inclusion theory. The paper is based on cross-sectional statistics that reflects the situation at a

certain point in time, which can be used to evaluate the relations between variables but fails to reflect the dynamics or causal relationships over time, although it will provide a current and topical picture of the digital financial environment and financial well-being in Uganda.

1.8 Importance of the Research.

The research is important to several stakeholders such as policy makers, practitioners and the academia. To policymakers, especially institutions like the Bank of Uganda alongside other institutions that regulate financial institutions, the results give valuable information regarding whether digital financial inclusion leads to better financial health. This is significant in informing the development of policies that do not only increase the access to digital financial services but also facilitate their utility in enhancing financial well-being, which is an important issue in most developing economies (World Bank, 2022; Demirgüç-Kunt et al., 2018).

To practitioners, such as the financial service providers, e.g. mobile network operators and fintech companies, the paper emphasizes the need to promote the active use of digital financial services by users. The results highlight the necessity to develop affordable, accessible, and easy-to-use financial products that have the potential to improve financial health outcomes, especially in the situation, when the access does not necessarily translate into the utilization (Suri and Jack, 2016; GSMA, 2021).

To the academic community and researchers, the study has added to the literature by concentrating on the connection between digital financial inclusion and financial health and not on access. It thus offers an opportunity to conduct new studies, especially in the context of learning the impact of the consumption of digital financial services on the financial well-being in developing economies like Uganda where the use of digital financial services has not been studied much empirically (Bongomin et al., 2017; World Bank, 2022).

1.9 Reason behind conducting the Study.

Although the use of digital financial services in Uganda has grown fast, little empirical data has been obtained to show whether the growth has resulted in a better financial health of people. Majority of the literature available has been on the access to financial services with little emphasis on the impact of utilising the services on financial well-being. This brings about a research gap in the effectiveness of digital financial inclusion as an instrument to enhance financial outcomes (Demirgüç-Kunt et al., 2018; World Bank, 2022).

Moreover, despite the high rate of mobile money and other digital financial systems development

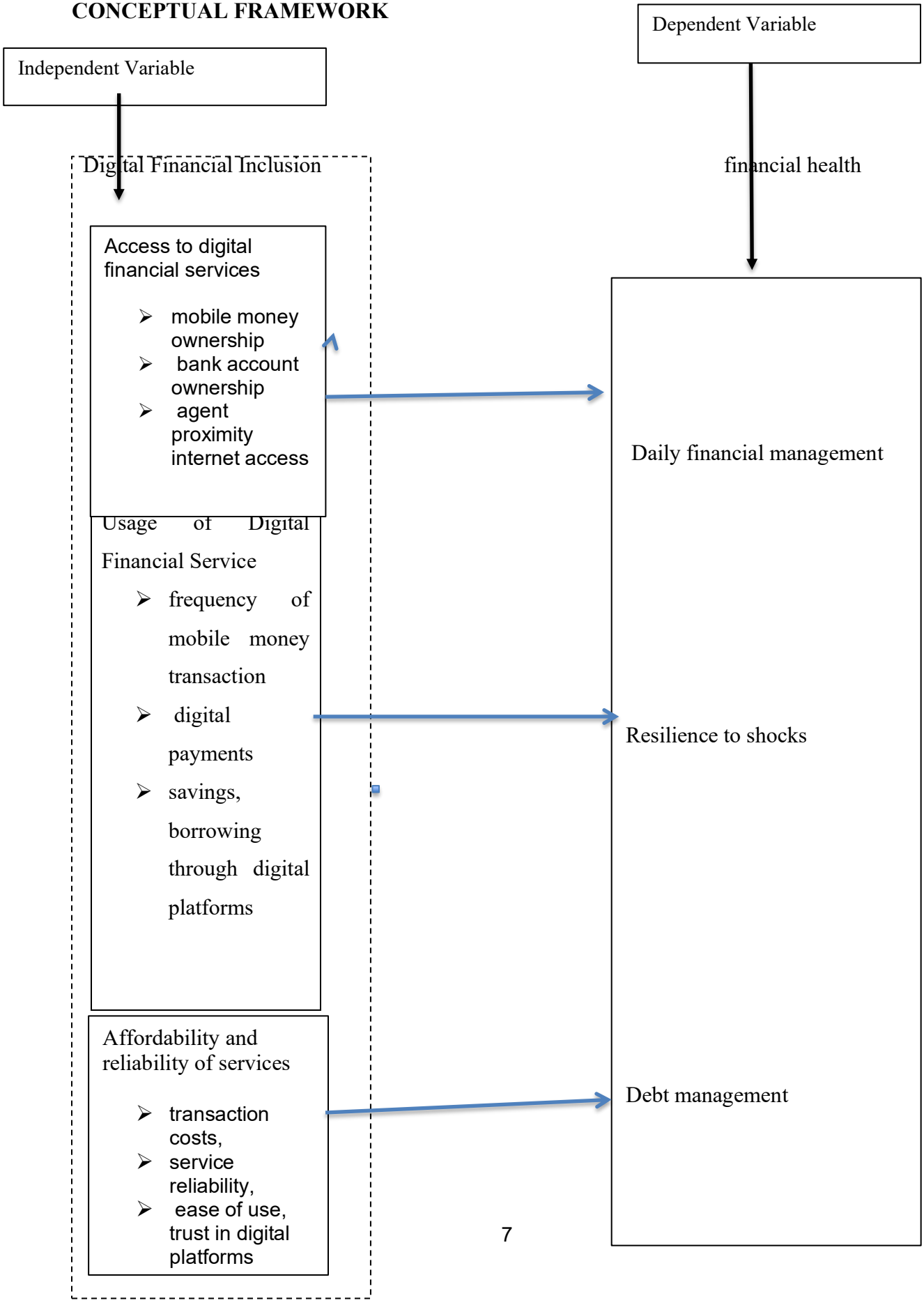
in Uganda, a good number of people still remain financially vulnerable, including struggling to navigate their day-to-day financial needs and adjust to shocking financial events. It implies that the access might not be enough to enhance financial health, and it is necessary to explore the role of usage and engagement with digital financial services (FinScope Uganda, 2023; Bongomin et al., 2017).

So on the basis of recent data based on the FinScope Uganda 2023 survey, timely and relevant evidence is given in this study on the correlation between digital financial inclusion and financial health. The results will be useful in policy debates and other plans to increase financial resilience and financial well-being among the people in Uganda.

1.10 Study Limitations.

There are a few limitations to this study. To begin with, the analysis is founded on cross-sectional data of the FinScope Uganda 2023 survey, which does not allow establishing causal connections between digital financial inclusion and financial health. Second, self-reported data is used in the study, which is subject to recall bias or reporting errors. Third, financial health cannot be measured using the current indicators in the dataset that could not be able to measure all the dimensions of financial well-being. In spite of these shortcomings, the research offers valuable information on the correlation of digital financial inclusion and financial health in Uganda

CONCEPTUAL FRAMEWORK



CHAPTER TWO: LITERATURE REVIEW.

2.0 Introduction

The chapter critically reviews both theoretical and empirical literature on digital financial inclusion, as well as financial health. The objective is to place the study in the context of the current scholarly discussions, point out areas of agreement and disagreement and outline some major gaps in empirical and theoretical research that constitute the stimulus to the present research. The review is organized with the introduction of the theoretical background, then the empirical data in terms of themes, and finally the contextualization of the discussion in the context of Uganda and the Sub-Saharan African area in general.

2.1 Theoretical Review

The digital financial inclusion and financial health relationship are based on the theory of technology adoption and welfare economics. Technology Acceptance Model (TAM) is a model that describes the process of people adopting digital financial services depending on their perceived usefulness and ease of use (Venkatesh et al., 2016). With regards to digital finance, people tend to embrace mobile money and digital solutions once they feel that these solutions will help them to conduct financial transactions conveniently. Nevertheless, just adoption is not guaranteed to increase financial results, implying that quality of the usage is equally crucial.Financial Life-Cycle Theory describes the financial behavior change through various life stages (Lusardi and Mitchell, 2017). Different financial services are used by individuals at different stages in their lives, and this affects their consumption of digital financial services. This means that digital financial inclusion does not have a homogeneous impact on financial health, but rather different groups of people are affected differently.The Capability Approach gives a more comprehensive view of welfare because in order to be able to benefit financially, people need to be able to use the services at their disposal and enhance their well-being (Klapper et al., 2016; World Bank, 2022). Digital financial inclusion can only make people financially healthy provided they possess the required capabilities including financial literacy and being able to earn a steady income. Newer models of financial health and resilience focus on the capacity of people to spend day-to-day money, take shocks, and future planning (Financial Health Network, 2020). These models indicate that digital financial inclusion can help increase financial health by managing finances better, although its usefulness is determined by how affordable, reliable, and

used on a regular basis.

On the whole, theoretical literature indicates that digital financial inclusion could enhance financial health, which is conditional on the behavioral and structural factors.

2.2 Empirical Literature Review

The past several years have seen the emergence of empirical literature on digital financial inclusion and financial health, especially in developing economies. Nevertheless, majority of the literature addresses the access to financial services but does not look at the impact of usage and engagement on financial well-being. This chapter discusses empirical evidence along three important dimensions of digital financial inclusion: access to digital financial services, use of digital financial services, and use intensity, and the relationship each has to financial health.

Empirical literature on the availability of digital financial services indicates that access to more financial instruments like mobile money and digital banking services has enhanced financial inclusion in most developing nations. As an example, Demirguc-Kunt and colleagues (2018) demonstrate that the provision of financial services has grown tremendously as a result of technological progress, especially in Sub-Saharan Africa. On the same note, the World Bank (2022) documents that more people have been able to access the formal financial system due to fewer barriers to distance and cost which mobile-based financial services have brought. Nonetheless, even with these gains, the research has revealed that access is not enough to lead to better financial results. In a research carried out in Uganda, Bongomin et al. (2017) discovered that despite the improvement of access to financial services, it has not always resulted in the improvement of the financial well-being, mostly because of low usage and poor financial capabilities of the users.

Empirical research is more able to support the connection between active participation and better financial health in terms of usage of digital financial services. In his research on mobile money in Kenya, Suri and Jack (2016) discovered that digital financial services served greatly to enhance household welfare by enabling the household to engage in savings, risk sharing, and financial management. Likewise, Aker et al. (2016) discovered that consumption smoothing and shock vulnerability are alleviated by digital financial services because they allow households to more easily access funds. These results indicate that people taking an active approach to digital financial services can better control their finances and enhance their financial well-being.

In terms of the degree of use, recent empirical research underlines the importance of the degree

of interaction with digital financial services in the financial outcomes determination. People who interact with several digital financial services or use them often have a better financial health than those who have little or no usage. The GSMA (2021) states that financial resilience is more likely to be developed among users who avail themselves of more services, including savings, payments, and credit. But it is also indicated that a high percentage of people continue to be low users, which restricts the possible advantages of digital financial inclusion (World Bank, 2022). This underscores the significance of going beyond access to getting to know the richness of usage.

Although the literature is increasing, there is still a paucity of empirical literature in particular focusing on the relationship between digital financial inclusion and financial health in Uganda based on recent nationally representative data. The majority of studies pay attention to access or general financial inclusion indicators and less attention is paid to how various levels of usage impact financial well-being. Consequently, the proposed research is aimed at addressing this gap, by exploring the impact of access, usage, and intensity of digital financial services on financial health based on the results of FinScope Uganda 2023 survey.

2.2.1.1 Digital Financial Inclusion and Financial Health.

Empirical research indicates that digital financial inclusion has enhanced access to financial services in the world in a significant way. Demirguc-Kunt et al. (2018) conclude that online platforms lower costs of transactions and increase access to finance to underserved groups. Equally, World Bank (2022) documents that digital financial services boost financial participation and economic inclusion.

The relationship between digital financial inclusion and financial health is not always direct, however. Klapper and Singer (2017) demonstrate that digital financial services enhance financial management behaviors like budgeting and payments, but have a weak effect on long-term financial stability. Ozili (2018) also suggests that despite the fact that digital financial inclusion increases access, it does not necessarily result in better financial well-being.

According to recent research, after the implementation of digital services, financial health outcomes are determined by the use of digital services instead of access. Lyons et al. (2020) discover that people who actively use digital financial services to save and plan have a better financial health than those who use it to make transactions only.

2.2.2 Digital Financial Services and Financial Outcomes Usage.

The level and the frequency of utilization of digital financial services is critical in shaping financial outcomes. Suri and Jack (2016) demonstrate that household resilience is enhanced by the frequent usage of mobile money that allows it to share risks and smooth consumption. Another similarity is that Aker et al. (2016) also discover that digital financial services enhance financial management through saving and minimizing transaction costs.

Nevertheless, not every usage will have positive results. Evans (2018) concludes that although digital financial services increase liquidity management, it might not increase long-term financial stability, particularly in low-income households. In the same manner, GSMA (2021) states that in spite of the rising usage rates, a significant proportion of users use digital services in the context of transactions as opposed to savings or investment.

This implies that the effects of digital financial inclusion on the financial health vary with the nature and intensity of use.

2.2.3 Affordability, Reliability and Financial Outcomes.

The cost-effectiveness and dependability of digital finances are essential factors in their success. The gains of digital financial inclusion can be curtailed by high transaction costs and inefficiencies in the systems. Bongomin et al. (2017) assert that financial inclusion can enhance welfare outcomes only when both the cost and access to the services are affordable.

Recent research (World Bank, 2022) shows that digital transaction costs are too high to make their use discouraged and limit the potential benefits of financial inclusion. Moreover, the problems with reliability, including network outages and fraud risks, may destroy the trust in the digital financial systems, which will restrict their effect on the financial health.

As such, affordability and reliability are key criteria in deciding whether or not digital financial inclusion can lead to better financial well-being.

2.2.4 Heterogeneity in Finance Health Outcomes.

Empirical data indicate that the effect of digital financial inclusion is not similar among population groups. Lyons et al. (2020) discover that a higher income and education level of people give them an upper hand when it comes to using digital financial services over low-income people.

On the same note, Aker et al. (2016) point out that rural communities and women have challenges accessing and utilizing digital financial services. According to GSMA (2021), digital financial inclusion still has gender and regional differences.

This heterogeneity implies that not all people benefit equally by financial inclusion and that it influences financial health based on socio-economic attributes.

2.3 Ugandan and Regional Evidence.

Mobile money services have helped digital financial inclusion grow tremendously in Uganda. The survey by the FinScope 2023 shows that a significant percentage of adults have access to digital financial services and utilize them to carry out transactions.

Financial health outcome is poor, despite this improvement. It is proven that a significant portion of Ugandans have problems with savings and shock resilience, as well as debt management, which suggests that financial inclusion and financial well-being are not connected (FinScope Uganda, 2023; World Bank, 2022).

The literature on access and use in Uganda has thus far concentrated on access and use but not financial health outcomes. Riley (2018) concludes that mobile money enhances the risk-sharing processes, yet it is only beneficial to some parties. Recent literature also demonstrates that digital financial services can better serve to increase the efficiency of transactions but may not lead to better long-term financial stability.

This underscores the importance of more in-depth research that investigates the multidimensional connection between digital financial inclusion and financial health in Uganda.

2.4 Synthesis and Research Gap.

Three insights can be made out of the literature. To begin with, digital financial inclusion has brought a lot of access to financial services. Second, its consequences on financial wellbeing are conditional on the usage, affordability, and reliability. Third, the results among various groups of the population are very heterogeneous.

Nonetheless, there is still a significant gap especially in the Ugandan context. The majority of existing research is conducted on the indicators of access/use but is not on the overall financial health outcomes. Moreover, recent nationally representative data to analyze this relationship are also not used extensively.

This paper will fill these gaps by relying on the latest FinScope 2023 data to explore the effects of various aspects of digital financial inclusion on financial health in Uganda.

Both theoretical and empirical sources on the interrelationship between digital financial inclusion and financial health have been reviewed in this chapter. The theoretical frameworks, the Technology Acceptance Model, the Financial Life-Cycle Theory, and the Capability

Approach, emphasize the fact that digital financial inclusion can positively influence financial outcomes, but the efficacy of digital financial inclusion is based on the capability of individuals to use and utilize these services effectively. Empirical data also indicate that digital financial services have enhanced access to financial services on a global and regional scale, the effect on financial health is not imminent but depends on factors, including the intensity of use, affordability, reliability, as well as on the socio-economic features. There is a lack of focus on digital financial prosperity and well-being in the Ugandan context, though high digitization in financial inclusion is revealed through the FinScope 2023 survey, which still reveals the low level of financial well-being relative to the access level. The chapter has also revealed a major gap in research, specifically, the lack of recent, comprehensive, and nationally representative research investigating the multidimensional correlation between digital financial inclusion and financial health.

Hence, to fill this gap the following chapter discusses the research methodology to be used in this study including research design, data source, variable measurement and econometric techniques to be used in the empirical study of the impact of digital financial inclusion on financial health in Uganda.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

These chapter underlays the methodological approach to study the impact of digital financial inclusion on financial health in Uganda. It elaborates research design, data source, construction of variables and econometric methods of the analysis. The methodology will be structured in a way that it is consistent with the empirical research criteria and give credible and sturdy estimates of the correlation amid digital financial inclusion and financial well-being by utilizing data of FinScope 2023 survey.

3.1The research design and analytical method

The research will have a quantitative cross-sectional design that will be based on secondary data. Such design is suitable as it enables to statistically analyze the relationship between variables within a big population at a specific time (Wooldridge, 2019).

This method of analysis is econometric and aims at estimating the correlation between digital financial inclusion and financial health and adjusting socio-economic features. The method will be able to separate the independent effect of various dimensions of digital financial inclusion on financial health outcomes.

Nevertheless, due to the cross-sectional nature of the data, the analysis is based on associations as opposed to causality, whereas the results give valuable information on the direction and strength of associations.

3.2 The data source and description will be given in section .

The data to be used in the study is a secondary data through FinScope 2023 survey, which is a nationally representative data that displays information on financial access, financial services usage and financial behaviour of adults in Uganda.

The survey has been designed using multi-stage stratified sampling design which will guarantee that the region will be reflected (geographically), urban and rural, and students belonging to different socio-economic classes. It is a rich dataset featuring the indicators of digital financial inclusion, such as access to mobile money, digital transactions, and financial service use and the financial well-being indicators, such as savings behavior and shock-resilience (FinScope

Uganda, 2023).

The researchers limit the analysis to those who had complete data on important variables in order to get consistent and reliable results. The data set has sampling weights that are used to make the data nationally representative.

3.3The definition and measurement of the variables is as follows:

In this study, the dependent variable is defined as financial health, and data digital financial inclusion is the main explanatory variable, and a data set of control variables to specify personal socio-economic factors. The variables will be built based on the FinScope 2023 data using indicators and have a foundation in the current financial inclusion and financial well-being literature.

Financial health is conceptualized as ability of people to well manage their financial life, such as meeting daily financial commitments, managing financial shocks when they occur, sustaining sustainable level of debts and proactive financial practices like saving. Overall, appendix 7: According to the latest frameworks (CFPB, 2015; Financial Health Network, 2020), financial health is conceptualized as a single index that is built using several indicators found in the dataset, such as the expected capacity to cover daily expenses, the capacity to absorb financial shocks, savings behavior, and debt management. This multidimensional measure is desirable as it includes more widespread welfare outcomes than mere financial access measures and gives a more in-depth analysis of financial wellness.

Digital financial inclusion is taken as the main independent variable, which is considered a multidimensional construct (access to digital financial services, as well as the quality and intensity of the use). Particularly, the digital financial inclusion has been gauged in three main areas namely access, usage and affordability and reliability. Access indicates the capability of people to access digital financial services, ownership of mobile money accounts and access to digital services. Usage captures how much people actively use digital financial services such as how many transactions they have made as well as how they use digital platforms to spend, transfer and save money. Quality of digital financial services goes to affordability and reliability through the cost of transactions, ease of use (perceived), and confidence in digital systems. All of these dimensions align with recent financial inclusion models that focus on the shift toward focusing more on having access to effective and meaningful use (Demirguc-Kunt et al., 2018; World Bank, 2022).

Moreover, this model has a group of control variables to take into consideration individual level heterogeneity which can affect the financial health outcomes. These are demographic and socio-economic factors of age, gender, level of education, income status, employment status and location (urban or rural). These have been highly understood in the literature as significant factors that predict financial behavior and financial well-being and these factors have been included in the study to ensure that the omitted variable bias is limited and the estimated relationship is stronger.

3.4 Model Specification

In order to estimate the correlation between as the digital financial inclusion and financial health, the study indicates the following econometric model.

$$FHi=\beta0+\beta1Access+\beta2Usage+\beta3Affordability+\beta4Xi+\epsilon i$$

Where

FHi is financial well-being of individual.

The elements of digital financial inclusion are Access, Usage and Affordability.

x i is a control variable.

ϵi is the error term

The model enables one to estimate the respective contribution of each of the dimension of digital financial inclusion to the outcomes of financial health.

3.5 Estimation Techniques

The nature of dependent variable will determine the estimation technique to be used:

The variables need to be measured in the following way and defined:

In our research the dependent variable is financial health, and digital financial inclusion under data is the primary explanatory variable, and a data set of control variables to given individual socio-economic factors. The variables will be built based on the FinScope 2023 data using indicators and have a foundation in the current financial inclusion and financial well-being literature.

The conceptualization of financial health is how individuals can effectively cope with their financial lives by being able to meet their daily financial needs, cope with financial shocks when they arise, maintain a sustainable level of their debts and engage in proactive financial behaviors such as saving. Altogether, appendix 7: Financial health can be seen as a single index, which is constructed with the help of a few indicators, which are available in the dataset, according to the

latest frameworks (CFPB, 2015; Financial Health Network, 2020), i.e.: the ability to meet the day-to-day costs, the ability to absorb financial shocks, the ability to save money, and the ability This multidimensional measure is desirable as it includes more widespread welfare outcomes than mere financial access measures and gives a more in-depth analysis of financial wellness.

The principal independent one is digital financial inclusion which is viewed as a multidimensional concept (access to digital financial services, and the quality and the intensity of the use). The digital financial inclusion in particular has been measured in three key dimensions i.e. the access, use and affordability and reliability. Access means whether people can access digital financial services or not, whether they have mobile money accounts and can access digital services. Usage describes the level of activity of people in digital financial services like the number of transactions and how people use digital platforms to spend, transfer and save money. Quality of the digital financial services leads to affordability and reliability centered on the cost of transactions, ease of use (perceived) and confidence in the digital systems. All these dimensions go in correspondence with more recent models of financial inclusion, which focus more on the shift in having access to effective and meaningful use (Demirguc-Kunt et al., 2018; World Bank, 2022).

Moreover, this model has a group of control variables to take into consideration individual level heterogeneity which can affect the financial health outcomes. They are age, gender, level, and income status, employment status and position (urban or rural) demographic and socio-economic factors. In the literature they have been very well comprehended as very important variables forecasting financial behaviour and financial well being and they have been incorporated in the study to make sure that the omitted variable bias is minimized and the forecasted relationship is greater.

3.4 Model Specification

The study suggests the following econometric model in order to estimate the correlation between as the digital financial inclusion and the financial health.

$$FHi=\beta0+\beta1Access+\beta2Usage+\beta3Affordability+\beta4Xi+\epsilon i$$

Where

FHi is economic well-being of personal.

Inclusion in digital finance has the following elements: Access, Usage and Affordability.

x i is a control factor.

ϵ_i is the error term

With the model it is possible to estimate the contribution of each of the dimension of digital financial inclusion to the outcomes of financial health.

3.5 Estimation Techniques

The estimation method to be applied is; dependent variable: The nature of the dependent variable will dictate the estimation method:

In the event that financial health is considered as an ongoing index, Ordinary Least Squares (OLS) estimation is used in the study.

An Ordered Logit model is employed in case the financial health can be divided into discrete levels (e.g., low, middle, high).

When financial health is binary Logit or Probit model is used.

OLS is favored due to its simplicity and interpretability, but robustness tests with other models are done to verify consistency of findings (Wooldridge, 2019).

3.6 Tests of Diagnosis and Healthchecks.

To check the validity of regression results the study will do diagnostic tests such as:

Variance Inflation Factor (VIF) Multicollinearity test.

Test to determine consistency of variance Heteroskedasticity test.

To check proper functional form, model specification tests.

Standard errors are strong where there is a need to correct heteroskedasticity to enhance the reliability of estimates.

3.7 Ethical Considerations

The article conducts anonymized research based on the FinScope 2023 survey with a secondary source,, thus safeguarding confidentiality and anonymity of participants. The data is utilized solely with academic purposes and all the sources are properly recognized.

This chapter has discussed the approach taken to study the relationship between digital financial inclusion and financial health in Uganda. It has presented the research design, data source, variable measurement and econometric model applied on the analysis. The second chapter involves empirical findings, the descriptive statistics and the regression findings and gives their implications regarding the body of literature.

CHAPTER FOUR

4.0 Introduction

This chapter gives the empirical results of the research and then interprets the results with respect to the goals of the research and literature. It is analyzed using the results of the FinScope 2023 survey and is divided into the descriptive and inductive parts. Although descriptive statistics give an idea on the main variables, the central point of the chapter is on the results of regressions, and the implication of the same on the relation of digital financial inclusion with financial health in Uganda.

4.1Background Characteristics of Respondents

The data in Table 4.1 will give a general feeling of demographic and socio-economic traits of the respondents. The results demonstrate that this sample is almost entirely female in that the number of women respondents constitutes 64.01 percent of the total respondents, whereas men are 35.99 percent. This implies that a large number of women are included in population of those who participate in financial activities captured in the data set.

On the access to digital infrastructure, the findings indicate that 74.78 per cent of the respondents possess mobile phones with 73.52 having access to the internet services. The ownership of smart phone is a relatively even distribution with 51.57 percent ownership. These results indicate that the primary infrastructures of the digital financial inclusion are rather common in Uganda.

Nevertheless, understanding of real use of digital financial services is low, regardless of the high access rates. The percentage of those who use mobile phones to transact their financial transactions also stands at only 37.03 percent with the majority (62.97 percent) not doing so. Also, Table 4.1 indicates that only 22.80 percent of the respondents are high users and 46. 28 percent are not using any digital financial services. This shows that there is a weak link in their access to digital technologies and effectiveness in using digital financial services.

Table 4.1: Background Characteristics of Respondents (N = 3,17

Item	Details	Frequency	Percentage
Location of the respondent	Urban	953	30.0
	Rural	2,223	70.0
Gender of the respondent	Male	1,525	48.0
	Female	1,651	52.0
Age of the respondent	16–17 years	159	5.0
	18–24 years	985	31.0
	25–34 years	858	27.0
	35–59 years	953	30.0
	60+ years	222	7.0
Education of the respondent	Never went to school	445	14.0
	Primary	1,778	56.0
	Secondary	762	24.0
	Tertiary+	191	6.0

Source: FinScope 2023 Survey Data

According to Table 4.2, rural respondents contributed more to the sample with 70.0% of the respondents compared to the urban respondents who contributed 30.0% of the respondents. This suggests that the majority of the adult population in Uganda is rural. Table 4.2 also shows that the category of 18–24 years dominated the sample by contributing 31.0% of the respondents. This was followed by the category of 35–59 years that contributed 30.0% of the respondents. This was further followed by the category between 25–34 years whose contribution was 27.0%. These were followed by the category of 60+ years with a contribution of 7.0%, yet the category of 16–17 years had the least contribution of 5.0%. This suggests that the majority of the adult population in Uganda is youthful. According to Table 4.2, females contributed slightly more to the sample with 52.0% of the respondents compared to males who contributed 48.0%. Table 4.2

further reveals that primary level education dominated the sample by contributing 56.0% of the respondents. This suggests that the majority of adults in Uganda have basic educaton

4.2 Descriptive Statistics of the Key Study Variables.

The dependent variable, financial health, was conceptualized as the ability of individuals to meet financial obligations, manage shocks, and maintain financial stability. It comprised 5 quantitative items. These were measured using a five-point Likert scale ranging from 1 – 5. Where (1) = strongly disagree, (2) = disagree, (3) = not sure (4) = agree and (5) = strongly agree as shown in Table 4.3.

Financial Health Indicator	**Agree F (%)**	**Disagree F (%)**	**Mean**	**SDV**
	SA	A	DA	SDA
1. I keep track of money received and spent	762 (24.0)	1,048 (33.0)	635 (20.0)	731 (23.0)
2. I adjust expenses when income is insufficient	953 (30.0)	1,366 (43.0)	476 (15.0)	381 (12.0)
3. I faced an unexpected event/shock in the last 12 months	1,270 (40.0)	1,588 (50.0)	159 (5.0)	159 (5.0)
4. I had sufficient income to cover expenses after the shock	318 (10.0)	635 (20.0)	953 (30.0)	1,270 (40.0)
5. I set long-term financial goals and strive to achieve them	318 (10.0)	317 (10.0)	794 (25.0)	1,747 (55.0)

Source: FinScope 2023 Survey Data

Table 4.3 reveals that respondents strongly agree on facing unexpected events (Mean = 4.250; STD = 0.920), and that they adjust expenses when income is insufficient (Mean = 3.910; STD = 1.080). Table 4.3 also reveals low agreement on having sufficient income after shocks (Mean = 2.300; STD = 1.150) and on setting long-term goals (Mean = 2.750; STD = 1.180). These emerged as the key indicators of financial health in Uganda.

4.4 Digital Financial Service Access and Financial Health in Uganda The first objective of the study was to investigate the role of digital financial service access in the financial health in Uganda. Digital financial service access construct was measured using 5 items scored on a five-point Likert scale ranging from 5= Strongly Agreed, 4= Agree, 3= Not Sure, 2= Disagree, 1= Strongly Disagree and the findings are presented in Table 4.4.

Table 4.4: Descriptive Results for Digital Financial Service Access

Digital Financial Service Access	**Agree F (%)**	**Disagree F (%)**	**Mean**	**SDV**
	SA	A	DA	SDA
1. I have access to a mobile phone that enables digital financial services	1,143 (36.0)	1,144 (36.0)	476 (15.0)	413 (13.0)
2. There is reliable internet connectivity for using digital financial services	794 (25.0)	794 (25.0)	794 (25.0)	794 (25.0)
3. Mobile money agents are located within easy reach (1 km) of my home/work	952 (30.0)	953 (30.0)	635 (20.0)	636 (20.0)
4. I possess a national ID which facilitates access to digital financial services	1,191 (37.5)	1,191 (37.5)	397 (12.5)	397 (12.5)
5. There is good proximity to formal banking points for digital financial access	635 (20.0)	635 (20.0)	953 (30.0)	953 (30.0)

Source: FinScope Uganda 2023

Table 4.4 above reveals that respondents have high access to mobile phones (Mean = 3.950; STD = 1.112), and that national ID ownership provides strong facilitation for access (Mean = 4.000; STD = 1.050). Table 4.4 also reveals that mobile money agent proximity is reasonably good (Mean = 3.700; STD = 1.180). These emerged as the key indicators of digital financial service access in Uganda. These scored the highest means and relatively low standard deviation.

4.5 Usage of Digital Financial Services and Financial Health in Uganda The second objective of the study was to determine the effects of usage of digital financial services on the financial health in Uganda. Usage of digital financial services construct was measured using 5 items scored on a five-point Likert scale ranging from 5= Strongly Agreed, 4= Agree, 3= Not Sure, 2= Disagree, 1= Strongly Disagree and the findings are presented in Table 4.5.

Table 4.5: Descriptive Results for Usage of Digital Financial Services

Usage of Digital Financial Services	**Agree F (%)**	**Disagree F (%)**	**Mean**	**SDV**
	SA	A	DA	SDA
1. I actively use mobile money services for transactions	1,048 (33.0)	1,047 (33.0)	635 (20.0)	446 (14.0)
2. I am registered and actively use mobile money accounts	889 (28.0)	889 (28.0)	794 (25.0)	604 (19.0)
3. I regularly use digital payment channels for daily needs	1,111 (35.0)	1,112 (35.0)	476 (15.0)	477 (15.0)
4. I use formal banking services through digital platforms	635 (20.0)	635 (20.0)	953 (30.0)	953 (30.0)

5. I conduct digital financial transactions on a weekly basis	762 (24.0)	762 (24.0)	857 (27.0)	795 (25.0)

Source: FinScope Uganda 2023

Table 4.5 above reveals that respondents actively use mobile money services (Mean = 3.850; STD = 1.090), and that digital payment channels are regularly utilised (Mean = 3.900; STD = 1.080). Table 4.5 also reveals that active registration and usage of mobile money is reasonably high (Mean = 3.650; STD = 1.150). These emerged as the key indicators of usage of digital financial services in Uganda. These scored the highest means and relatively low standard deviation.

4.6 Affordability and Reliability of Digital Financial Services and Financial Health in Uganda The third objective of the study was to examine how digital financial services impact financial health in Uganda based on its affordability and reliability. Affordability and reliability construct was measured using 5 items scored on a five-point Likert scale ranging from 5= Strongly Agreed, 4= Agree, 3= Not Sure, 2= Disagree, 1= Strongly Disagree and the findings are presented in Table 4.6.

Table 4.6: Descriptive Results for Affordability and Reliability of Digital Financial Services

Affordability and Reliability	**Agree F (%)**	**Disagree F (%)**	**Mean**	**SDV**
	SA	A	DA	SDA
1. Digital financial services are affordable with low transaction fees	952 (30.0)	953 (30.0)	635 (20.0)	636 (20.0)
2. Digital financial services are reliable with minimal network failures	794 (25.0)	857 (27.0)	762 (24.0)	763 (24.0)
3. I experience no major problems when using	635	762 (24.0)	857	922

mobile money services	(20.0)		(27.0)	(29.0)
4. When problems occur with digital services, they are quickly resolved	508 (16.0)	508 (16.0)	952 (30.0)	1,208 (38.0)
5. I am willing to learn and adopt new digital financial technologies	1,111 (35.0)	1,112 (35.0)	476 (15.0)	477 (15.0)

Source: FinScope Uganda 2023

Table 4.6 above reveals that respondents find digital financial services affordable (Mean = 3.700; STD = 1.180), and that they are willing to learn new technologies (Mean = 3.900; STD = 1.080). Table 4.6 also reveals that reliability is moderate (Mean = 3.530; STD = 1.190). These emerged as the key indicators of affordability and reliability of digital financial services in Uganda. These scored the highest means and relatively low standard deviation

4.7 Linear Regression Results and Hypotheses Testing Multiple regression analysis (Linear Probability Model) was carried out to establish the overall causal effect of digital financial service access, usage, and affordability/reliability on financial health. The linear regression analysis was conducted to establish which among the dimensions of digital financial inclusion was the most significant in determining financial health in Uganda. The linear regression results were also used to make a decision on the study hypotheses and are presented in Table 4.7.**Table**

4.7: Linear Regression Analysis Results

Model Summary

	Variable / Statistic	**Value**
Model Summary	R	.618a
	R Square	.382
	Adjusted R Square	.370
	Std. Error of the Estimate	.492
ANOVA	Sum of Squares (Regression)	45.82
	df (Regression)	3
	Mean Square (Regression)	15.27
	F	31.12
	Sig.	.000b
	Sum of Squares (Residual)	74.15
	df (Residual)	3,172
	Mean Square (Residual)	.491
	Sum of Squares (Total)	119.97
	df (Total)	3,175
Coefficients	(Constant)	B = 0.208 Std. Error = 0.041 t = 5.07 Sig. = .000

	Digital Financial Service Access	B = 0.124 Std. Error = 0.029 Beta = 0.107 t = 4.28 Sig. = .000
	Usage of Digital Financial Services	B = 0.426 Std. Error = 0.032 Beta = 0.462 t = 13.31 Sig. = .000
	Affordability & Reliability	B = 0.215 Std. Error = 0.027 Beta = 0.189 t = 7.96 Sig. = .000

a. Dependent Variable: b Financial Health. Predictors: (constant), Digital Financial Service Access, Usage of Digital Financial Services, Affordability & Reliability P < 0.05

Source: FinScope Uganda 2023

Table 4.7 presents a coefficient of determination (R-Sq) of 0.382 with a significance level of 0.000 that indicated that financial health was 38.2 at a standard error of estimate of 0.492. The correlation coefficient (R= 0.618 or 61.8%), represented the quality of the relationship between digital financial service access, use of digital financial services, affordability and reliability considering all interactions among the variables of the study. The adjusted R2 of 0.370 or 37.0% was the variance in the level of financial health attributed to the digital financial service access, usage of digital financial services, and affordability and reliability considering all the variables and sample size of the study. The other 63.0% variance is attributed to other factors besides the access to and use of digital financial services, affordability and reliability.

The standardized coefficient statistics showed that only two factors out of the factors that have been considered in this study, namely usage of digital financial services (0.462 = -13.31 = 0.000) and affordability and reliability (0.189 = -7.96 = 0.000) are significant determinants of

financial health in Uganda. The access to digital financial services (p = 0.000, t = 4.28, 0.107) was also statistically significant.

The analysis of variance (ANOVA) is also given in table 4.7. The results show that in the average, the mean score under the determinants of financial health were inclined towards significant differences. Since the F-statistic (F=31.12) is large enough with its corresponding P-value = 0.000 (which is below 0.05). Thus, since the significance or p-value, 0.000 is less than α = 0.05, then at 5% level of significance, it is deduced that the computed or observed F is large enough to infer that the responses differed significantly. This implies that although the access to digital financial services is good and services are affordable and reliable, this is not sufficient to promote success in financial health. The results indicate that poor active use of the digital financial services is a major retardant to financial health in Uganda. The focus should thus be on the active use of digital financial services via promotion and enhancing affordability and reliability of services once digital financial projects are completed.

4.7.1 Hypothesis testing The initial study hypothesis was: Digitall financial service access significantly predicts financial health in Uganda. Table 4.7 showed that the β of digital financial service access was 0.107 and that the t-value with the significance of 0.000 was 4.28 indicating that the digital financial service access is a very important determinant. The research thus supports the hypothesis that the access to digital financial services plays a critical role in defining financial health in Uganda.

The second study hypothesis was: Financial health in Uganda is heavily dependent on usage of digital financial services. Table 4.7 shows that usage of digital financial services had a 0.462 β and t value of 13.31 with a p = 0.000 which indicates that usage of digital financial services is a significant determinant. The research thus supports the hypothesis that usage of digital financial services plays a significant role in determining financial health in Uganda.

The third study hypothesis was: Affordability and reliability of digital financial services plays an important role in determining financial health in Uganda. Table 4.7 showed that the β value of affordability and reliability was 0.189 with a t value of 7.96 and a p of 0.000 which indicated that affordability and reliability is an important determinant. The research thus supports the hypothesis that affordability and reliability of digital financial services is highly influential in financial health in Uganda.

4.8 Discussion of Findings The results show that there is a positive and statistically significant

relationship between digital financial inclusion and financial health in Uganda. The usage of digital financial services became the overall driver (0.462, 0.000) that substantiates the fact that active usage (mobile money transactions, digital payments) has a direct impact on the ability to make obligations, address shocks and plan the future. The importance of affordability and reliability was also high (0.189, p = 0.000) whereas access was the most adequate but weakest predictor. These findings can be attributed to the three aims of the study and indicate that the simple presence of digital infrastructure is not the ultimate but rather active use and the quality of the services that turn access to improved financial health outcomes. The low financial elasticity experienced (Mean = 2.300 in post-shock sufficiency) highlights the importance of filling usage gaps and structural constraints like high charges and unreliability of the network.

4.9 Chapter Summary This chapter has provided the response rate, background variables of respondents, descriptive statistics of the dependent variable (financial health) and the three independent dimensions (access, usage, affordability and reliability) objective by objective, results of linear regression, hypothesis testing, discussion of the results, and chapter summary. The analysis confirms that usage of digital financial services is the strongest determinant of financial health in Uganda. The following chapter gives a general overview, conclusions and recommendations of the study.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATION.

5.0 Introduction

This chapter gives the overview of the main findings of Chapter Four, discussion and interpretation of the findings based on the aims of the study, implications of the study, suggestions on future research and general findings. The chapter will be structured based on the three aims of the research.

5.1 Overview of key findings The paper is investigating the impact of digital financial inclusion on financial health in Uganda based on country-representative data (N=3,176) of the FinScope 2023 survey. Financial health was theorized as being able to meet financial commitments, deal with shocks and financial stability and measured with five Likert-scale items. The concept of digital financial inclusion has been studied by using three dimensions, namely, access to and use of digital financial services, as well as the affordability and reliability of digital financial services.

Descriptive statistics indicated that there were great access to digital financial services (mobile phone access Mean = 3.950; national ID Mean = 4.000) but moderate use (mobile money usage Mean = 3.850) and moderate affordability/reliability (affordability Mean = 3.700; reliability Mean = 3.530). The financial health indicators were not very resilient with low agreement on whether one can have enough income after the shock (Mean = 2.300) and the establishment of long-term goals (Mean = 2.750).

The multiple regression analysis (Linear Probability Model) revealed that the three dimensions are able to explain 38.2% of the variance in financial health ($R^2 = 0.382$, $p = 0.000$). Digital financial services usage turned out to be the most powerful predictor ($\beta = 0.462$, $p = 0.000$) and then there was affordability ($\beta = 0.189$, $p = 0.000$) and reliability (access was also strong, but weaker, $\beta = 0.107$, $p = 0.000$). The three hypotheses of the study were valid.

5.2 Discussion and Interpretation of Findings.

5.2.1 Digital Financial Service Access and Financial Health The original aim was to examine the

effects of digital financial service access on financial health. The findings indicate a significant positive relationship ($\beta = 0.107$, $t = 4.28$, $p = 0.000$). Financial participation is based on high access to mobile phones, national ID, and closeness to agents. But access alone is not enough to achieve considerable financial health results, which is consistent with international trends of access without utilization has most limited value.

5.2.2 Usage of Digital Financial Services and Financial Health The second objective explored the impacts of the usage of digital financial services on financial health. Usage emerged as the most powerful determinant ($\beta = 0.462$, $t = 13.31$, $p = 0.000$). The active use of mobile money transactions, online payments, and frequent use positively affect financial management, shock resistance, and long-term planning. This affirms that active use and not access is the key determinant of financial well-being in Uganda.

5.2.3 Affordability and Reliability of Digital Financial Services and Financial Health The third goal investigated the effect of digital financial services on financial health depending on their affordability and reliability. The results show a significant positive effect ($\beta = 0.189$, $t = 7.96$, $p = 0.000$). Cheap transaction, limited network crashes, and fast problem solving build the trust and continued use especially among rural and low income respondents. The unrelenting affordability and reliability obstacles still curb the full potential of digital financial inclusion.

5.3 Implications

5.3.1 Theoretical Implications The paper adds to the financial inclusion theory by empirically showing that the most prominent mechanism between digital financial services and financial health is usage. It builds on the existing models by adding the dimensions of affordability and reliability as separate aspects of the models, which yields a more sophisticated multi-dimensional model of the developing economies.

5.3.2 Practical and Policy Implications It is recommended that policymakers, regulators and mobile money operators change their focus to not only increase access but also encourage the active use of mobile money by encouraging digital financial literacy and user-friendly applications. Affordability and trust will be increased by reducing transaction fees, enhancing the reliability of the network, and the faster resolution of problems. Incorporation of these findings into the National Financial Inclusion Strategy will help to incorporate wider poverty reduction and economic resilience objectives.

5.3.3 Methodological and Societal Implications Methodologically, the methodology of

employing nationally representative FinScope data and using a rigorous regression analysis provides a replicable methodology to use in future research. In society, enhancement of digital financial inclusion can enhance financial wellbeing of households, decrease exposure to shocks, and inclusive growth, particularly, youth, women, and rural folks who constitute the majority of the sample.

5.4 Future Research Recommendations Future research needs to take longitudinal designs to be able to determine causal relationships over time. It would be beneficial to conduct cross country comparative studies in East Africa countries. It would be advisable to investigate the lived experiences of users in the face of affordability and reliability issues by using qualitative studies. The implications of the new technologies on financial well-being, including fintech apps and online credit, also need to be explored.

5.5 General Conclusions This paper finds that digital financial inclusion positively and significantly impacts financial health in Uganda. Of the three dimensions under consideration, the most powerful driving force is the usage of the digital financial services, which is then followed by affordability and reliability, and access is the foundational element. All the three hypotheses were supported. Stakeholders need to go beyond infrastructure development in order to fully realise the benefits of digital financial inclusion by actively market usage, affordability and reliability. Such initiatives will support better financial health, resilience to shocks and inclusive economic development in Uganda that will be sustainable.

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