

**DIGITAL FINANCIAL LITERACY AND FINANCIAL INCLUSION OF SAVINGS AND  
CREDIT COOPERATIVE ORGANISATION MEMBERS IN UGANDA  
A STUDY OF SACCO MEMBERS IN MAWOGOLA NORTH COUNTY**

**BY**

**JAMES MULIISA**

**19/U/18873/GMBA/PD**

**A DISSERTATION SUBMITTED TO DIRECTORATE OF RESEARCH AND  
GRADUATE TRAINING IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE AWARD OF DEGREE OF MASTER OF BUSINESS  
ADMINISTRATION OF KYAMBOGO UNIVERSITY**

**OCTOBER, 2023**

## DECLARATION

I hereby declare that this research report is my original work and has not been published or submitted to any university or institution of higher learning for any award.

Sign.....

Date.....

JAMES MULIISA

REG NO: 19/U/GMBA/18873/PD

## APPROVAL

This work has been done under our supervision and has met the research requirements of Kyambogo University and is now ready for submission.

Dr. Maurice MUKOKOMA (PhD)

Principal Supervisor

Sign.....

Date.....

Dr. Dan AYEBALE (PhD)

Second Supervisor

Sign.....

Date.....

## **DEDICATION**

This research report is dedicated to my lovely daughter, Myra Cloe Ankunda.

## **ACKNOWLEDGEMENT**

I give God all the praise and thanks for providing me wisdom, financial support and strength to complete all the study's requirements.

My great thanks go to my dear supervisors., Dr. Dan Ayebale and Dr. Maurice Mukokoma, who have shared essential expertise about the research process with me and have always made time to guide me amidst their hectic schedules. God bless you for all your efforts.

A particular thanks to my classmates for their encouragement, support, and scholarly suggestions. Their inputs during our interactions have greatly benefited the completion of this task.

## **LIST OF FIGURES**

Figure 1 A conceptual framework showing DFL and financial inclusion.....	10
--	----

## LIST OF TABLES

Table 1 Factor analysis of the study variables, their measures and factor loadings .....	27
Table 2 Cronbach's alpha for the study variables.....	28
Table 3 Collinearity diagnostics .....	30
Table 4 Sample characteristics.....	32
Table 5 Descriptive statistics of digital financial knowledge .....	34
Table 6 Descriptive statistics of digital financial skills .....	36
Table 7 Descriptive statistics of digital financial attitude.....	38
Table 8 Descriptive Statistics of Financial inclusion.....	39
Table 9 Correlations between study variables .....	40
Table 10 Regression results .....	41
Table 11. Regression modal summary and coefficients for the influence of digital financial skills on financial inclusion of SACCO members.....	42
Table 12. Regression modal summary and coefficients results .....	43
Table 13: Multiple regression analysis .....	43

## **LIST OF ABBREVIATIONS**

SACCO: Savings and Credit Cooperative organization

BOU: Bank of Uganda

MSC: Micro Finance Support Center

FLISG: Financial Literacy Information Sharing Groups

FLAG: Financial Literacy Advisory Group



## TABLE OF CONTENTS

DECLARATION .....	ii
APPROVAL .....	iii
DEDICATION .....	iv
ACKNOWLEDGEMENT .....	v
LIST OF FIGURES .....	vi
LIST OF TABLES .....	vii
LIST OF ABBREVIATIONS.....	viii
TABLE OF CONTENTS.....	ix
ABSTRACT.....	xiii
CHAPTER ONE.....	1
INTRODUCTION .....	1
1.1 Introduction .....	1
1.2 Background of the Study.....	2
1.2.1 Historical Background.....	2
1.2.2 Theoretical background.....	4
1.2.3 Conceptual background.....	5
1.2.4 Contextual background .....	6
1.3 Statement of the Problem .....	8
1.4 The purpose of the study .....	9
1.5 Objectives of the study .....	9
1.6 Research questions .....	9
1.7 Conceptual Frame work .....	10
Figure 1 A conceptual framework showing DFL and financial inclusion.....	10
1.8 Study scope .....	11
1.8.1 Content scope.....	11
1.8.2 Geographical scope .....	11
1.8.3 Time scope .....	12
1.9 Significance of the study.....	12
1.10 Operational definitions of the study .....	12

CHAPTER TWO .....	14
LITERATURE REVIEW .....	14
2.1 Introduction .....	14
2.2 Theoretical review .....	14
2.2.1 Financial literacy theory .....	14
2.2.2 Cognitive dissonance theory .....	15
2.3 Conceptual review .....	16
2.3.1 Digital financial literacy .....	16
2.3.2 Financial inclusion .....	17
2.4 Empirical literature .....	17
2.4.1 The effect of digital financial knowledge and financial inclusion .....	17
2.4.3 Effects of digital financial skill on financial inclusion .....	19
2.4.3 Effects of digital financial attitude on financial inclusion .....	20
2.5 Knowledge gap .....	21
CHAPTER THREE .....	22
METHODOLOGY .....	22
3.1 Introduction .....	22
3.2 Research design .....	22
3.3 Study population .....	22
3.4 Sample size .....	23
3.5 Sampling technique .....	23
3.6 Data collection methods .....	23
3.6.1 Quantitative method .....	24
3.6.2 Qualitative method .....	24
3.7 Procedure for data collection .....	24
3.8 Measurement of the study variables .....	25
3.8.1 Independent variable .....	25
3.9 Validity and reliability .....	26
3.9.1 Validity .....	26
3.9.2 Reliability .....	28
3.10 Data analysis .....	29
3.10.1 Quantitative data analysis .....	29

3.10.2 Qualitative data analysis.....	29
3.11 Diagnostic tests .....	29
3.12 Ethical consideration.....	30
CHAPTER FOUR.....	32
DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS .....	32
4.1 Introduction .....	32
4.2 Characteristics of respondents.....	32
4.3 Descriptive statistics of the study variables .....	34
4.3.1 Digital financial knowledge .....	34
4.3.2 Digital financial skills .....	35
4.3.3 Digital financial attitude.....	37
4.3.4 Financial inclusion .....	39
4.4 Correlation analysis.....	40
4.5.1 Regression analysis for the effects of digital financial knowledge on financial inclusion.....	41
4.5.2 The effect of digital financial skills on financial inclusion .....	42
4.5.3 Regression analysis for the effect of digital financial attitude on the financial inclusion .....	42
4.5.4 Regression analysis for the effect of digital financial literacy and financial inclusion of SACCO members in Mawogola North County, in Sembabule district.....	43
CHAPTER FIVE .....	45
DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS .....	45
5.1 Introduction .....	45
5.2 Summary of findings.....	45
5.3 Discussion of findings.....	46
5.2.1 The effects of digital financial knowledge on financial inclusion.....	46
5.2.2 The effects of digital financial skills on financial inclusion.....	47
5.2.3 The effects of digital financial attitude on financial inclusion .....	47
5.3 Conclusions .....	49
5.4 Recommendations .....	49
5.5 Areas for further research .....	49
REFERENCES .....	51
APPENDIX I .....	60

QUESTIONNAIRE .....	60
APPENDIX II.....	66
INTERVIEW GUIDE .....	66

## ABSTRACT

The study sought to investigate the effects of digital financial literacy on financial inclusion among SACCO members in Uganda. The study specifically examined the effect of digital financial knowledge on financial inclusion of SACCO members in Mawogola North in Sembabule District, assessed the effect of digital financial skill on financial inclusion of SACCO members in Mawogola North in Sembabule District and examined effect of digital financial attitude on financial inclusion of SACCO members in Mawogola North in Sembabule District. The financial literacy theory was utilised to conceptualize the variables as used in the study. A cross-sectional study research design was used in the study, and a purposive sampling was employed to choose a sample of 242 customers from a population of 660 respondents. Data was obtained from SACCO members and SACCO staff members using both qualitative and quantitative techniques. The study used multiple layers of analysis, starting with descriptive statistics, then using correlation, and finally with regression analysis. The findings of the study indicated that digital financial knowledge was the strongest predictor of financial inclusion of SACCO members, this was followed by digital financial attitude and lastly digital financial skills which was insignificant. In addition, the findings of the study also indicated that digital financial knowledge, digital financial skills and digital financial attitude had a significant positive correlation with financial inclusion at 0.01 level of significance. The study therefore, concluded Digital financial knowledge, Digital financial skills, Digital financial attitude have a positive and significant effect on financial inclusion of SACCO members. The study recommended that the Government of Uganda should invest in boosting digital financial knowledge and skills to SACCO members across the country through trainings. This should include basic training on how to use smartphones, mobile apps. It further recommended that SACCOS should educate members about the security measures in place to protect their digital transactions in order to build trust and encourage members to use digital services confidently.

Key words: Digital financial knowledge, Digital financial skills, Digital financial attitude, Financial inclusion.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

Digital financial literacy (DFL) is anticipated to be an essential aspect of financial inclusion in the digital age (Morgan & Trinh, 2020a). Financial technology, or the delivery of financial products to individuals and enterprises through the use of computers and digital devices like smartphones, has emerged as an effective instrument for fostering financial inclusion (Morgan & Trinh, 2020a).

In addition to this, the coronavirus (COVID-19) has imposed unprecedented difficulties on the vulnerable and the informal sector, interrupting enterprises and revenues. Traditional institutions that provide services to the underprivileged and microenterprises are under great strain. Curfews and Lockdowns imposed to prevent the virus from spreading, culminated into the decline and halting of SACCOs and mobile money agent operations in Uganda (World Bank, 2021). While, digital financial literacy is viewed as a solution, there is still no supporting evidence in the context of SACCO members in Mawogola North. As a result, the study sought to contribute to this cause of focus by analyzing the effect of digital financial literacy on the financial inclusion of SACCO members in Uganda.

## **1.2 Background of the Study**

### **1.2.1 Historical Background**

Financial literacy is a subject that has been debated all over the world. To grasp the concept of digital financial literacy, we must first embrace financial literacy concept (Prasad, 2018).

Financial literacy history appears to be hazy. However, Finke et al. (2017) links its origin to Benjamin Franklin in 1737, who believed that the subject of money management started from professional mentors, friends and parents. Benjamin's money management advice provided the groundwork for today's financial literacy, and it gained popularity following the release of his book "Hints for Those Who Would Be Rich" where the notable Quote "A penny saved is two pence clear" drew the interests for many scholars.

According to Kovács & Terták (2019), by the end of the nineteenth century, financial literacy had gained prominence, but there were still no formal instructions available. It was therefore until the 20<sup>th</sup> century that the first formal teaching on financial literacy was conducted on the topic of personal finance. This laid foundation for financial literacy which prompted many institutions to adopt and integrated in the education systems.

Globally, several national Governments have made steps to enhance financial literacy. For instance, in a bid to improve financial inclusion, Reserve Bank of India established financial literacy and credit training facilities across the country to provide free financial education to Indians (Kasalirwe & Lokina, 2016).

Financial literacy is becoming more popular in Africa. The South African government, for example, created the Financial Sector Charter in 2004, which requires all financial services

organizations to donate 0.2 percent of their yearly revenues to financial education programs (Matewos et al., 2016).

In Uganda, the subject of financial literacy was popularized in 2013 when the Bank of Uganda led a collaborative process with stakeholders to produce the Financial literacy strategy. The Financial Literacy Advisory Group (FLAG) approved the Strategy, which incorporates feedback from the Financial Literacy Information Sharing Group (FLISG) (European Commission, 2013).

According to Lyons & Hanna (2021), financial literacy has long been seen as a feasible strategy for reducing financial market inequities and increasing financial inclusion. However, lately, there has been a paradigm shift toward what is now known as "digital financial literacy. This mainly due to rapid changes in the business environment especially technology and need to address customer needs.

The COVID-19 epidemic and fintech have accelerated and fueled the growth of digital financial transactions recently. Conventional financial knowledge isn't enough to assist people to effectively reach and use DFS. DFS is growing rapidly as a vital ingredient requiring a range of skills, knowledge and competence that encompasses some parts of both financial and digital literacy (Machasio, 2020).



### **1.2.2 Theoretical background**

This research adopted the financial literacy theory of financial inclusion. The theory of financial literacy is a recent concept that describes individual's financial behavior by fusing concepts from management, psychology, sociology, and economics (Mwangi & Cheluget, 2018). The Jumpstart coalition for personal financial literacy championed financial literacy as a construct in its first research of financial literacy among students (Mwangi & Cheluget, 2018).

According to Ozili (2010), theory of financial literacy emphasizes that increasing citizens' financial knowledge and skills through promoting financial literacy training is the best way to achieve financial inclusion. This argument asserts that financial literacy boosts individual's willingness to engage in financial system as a whole. The theory contends that those who have a better understanding of finances are more informed of the numerous financial products. Individuals who are informed of the available financial services that are already accessible and can enhance their well-being are inclined to financial inclusion (Brochado & Mendes, 2021).

According to this theory, SACCO members would more likely be financially included based on information available, the extent of digital financial products awareness and knowledge and skills of using Fintech (Cojoianu et al., 2020). Therefore, this theory is pertinent to this study because financially literate individuals may have accumulated digital financial knowledge, digital financial skills and change their attitude through training and considering the dynamic factors in the business environment all of which may enhance financial inclusion.

### **1.2.3 Conceptual background**

There is no unified, acknowledged definition of digital financial literacy. However, according to OECD (2018), DFL is a blend of two notions that is, digital platforms and financial literacy. The study emphasised that one's conduct, attitude, and awareness of financial products and services are all correlated with their level of financial literacy (Tony and Desai 2020).

According to *UNESCO* (2018), DFL is a combination of fundamental abilities and skills necessary to operate with digital technology, retrieving and processing information. Digital literacy allows for engagement in social networks for knowledge generation and sharing, as well as support for a wide range of professional computing abilities (Bansal, 2019). Digital literacy, like conventional literacy, equips a person to accomplish various valuable outcomes in life, particularly in the new digital economy (Lyons, Kass-Hanna & Fava, 2021). Saini (2019), digital financial literacy entails possessing required knowledge, skills and behaviors required to properly conduct transactions using digital technologies.

Financial inclusion refers to as having access to and using high-quality, accessible, and sufficient financial services that aid in financial sustainability (Life, 2019). Furthermore, a comprehensive financial system is necessary to simplify resource allocation. Similarly, having easy access to financial institutions can improve routine transactions while simultaneously reducing the usage of institutional loans, which is sometimes exploitative.

Financial inclusion refers defined as the effort to guarantee that disadvantaged and minority populations have equitable and transparent access to relevant financial services (Pant Joshi, 2011).

#### **1.2.4 Contextual background**

Savings and Credit Cooperatives are locally owned and operated financial institutions that were established to serve the needs of their members. Under the co-operative statute of 1991, these entities mobilize and channel savings exclusively among their members (Nuwagaba, 2012). According to BOU (2014) SACCO members commit to save funds and offer credit to participants at fair rates. SACCOs primarily serve the rural population, which frequently don't have access to readily available and commonly used financial services.

SACCO establishment and governance are governed by Uganda's Cooperatives Act 131, which is administered by MoFPED. SACCO leadership must be democratically elected in the Annual General Assembly, according to the Act. The general assembly elects the board of directors, which consists of 5-9 members, as well as the supervisory-audit committee, which consists of 2-3 members (Mpiira et al., 2014).

According to the Microfinance Support Center, Savings and credit cooperative members' savings and borrowing decreased by 72 percent and 50 percent, respectively (Document, 2020). According to MoFPED, there were 2417 fully registered SACCOs in Uganda as of 2009 and these increased to 13179 SACCOs by 30<sup>th</sup> August (Baguma David, 2015). According to Sembabule district commercial officer, there are over 47 registered SACCOs in Sembabule District and 22 of them are in Mawogola county.

In a bid to foster financial inclusion, the Government established a special fund at the Micro Finance Support Centre through which SACCOs and cooperatives can obtain low-interest loans (Report, 2014). Similarly, the Government and international agencies have taken initiatives to boost SACCO and Cooperative digitization. For example, Pegasus assisted in the digitalization of

two Sembabule District cooperatives: Sembabule Dairy and Livestock Cooperative and Nabitanga Dairy Cooperative (Wakyiku & Adong, 2019). This has therefore prompted a researcher to analyse the effects of digital financial literacy and financial inclusion among SACCO members in Mawogola north.

### **1.3 Statement of the Problem**

The Government of Uganda, collaborating with other developing partners, has continuously developed strategies to boost financial inclusion, such as the National Financial Inclusion Strategy (2019-2024), developed jointly by the MoFPED and the Bank of Uganda, to assist SACCO members access a variety of high-quality and affordable financial services (BoU, 2019).

The Government has also established a special fund (Emyooga fund) at the Micro Finance Support Centre through which SACCOs and cooperatives can obtain low-interest loans. In addition, in June 2021 the world bank approved 200 million US dollars to boost digital inclusion to enable rural, unserved and underserved community members' access to online services in Uganda (Bank, 2020).

However, recent reports continue to show low formal inclusion by SACCO members. This is evidenced in (Finscope, 2018) report where formal financial Inclusion by SACCOs members in Sembabule district stood at only 5%.

Further, reports by Microfinance Support Centre (2021) shows a reduction in usage of SACCO services by members e.g. borrowing rate reduced by 20% in 2021 in Sembabule District. Whereas, some studies such as Prasad (2017) indicate that digital financial literacy may influence financial inclusion, there is no proof in context of SACCO members of Mawogola North in Sembabule District. The researcher is therefore prompted to explore the effects of digital financial literacy on the financial inclusion, utilizing data from SACCO members in Mawogola North, Sembabule District.

#### **1.4 The purpose of the study**

The purpose of the study was to assess the effects of digital financial literacy on financial inclusion of SACCO members in Uganda, with a focus on SACCO members in Mawogola North in Sembabule District.

#### **1.5 Objectives of the study**

- i. To assess the effect of digital financial knowledge on financial inclusion of SACCO members in Mawogola North in Sembabule District.
- ii. To establish the effect of digital financial skills on financial inclusion of SACCO members in Mawogola North in Sembabule District.
- iii. To assess the effect of digital financial attitude on financial inclusion of SACCO members in Mawogola North in Sembabule District.

#### **1.6 Research questions**

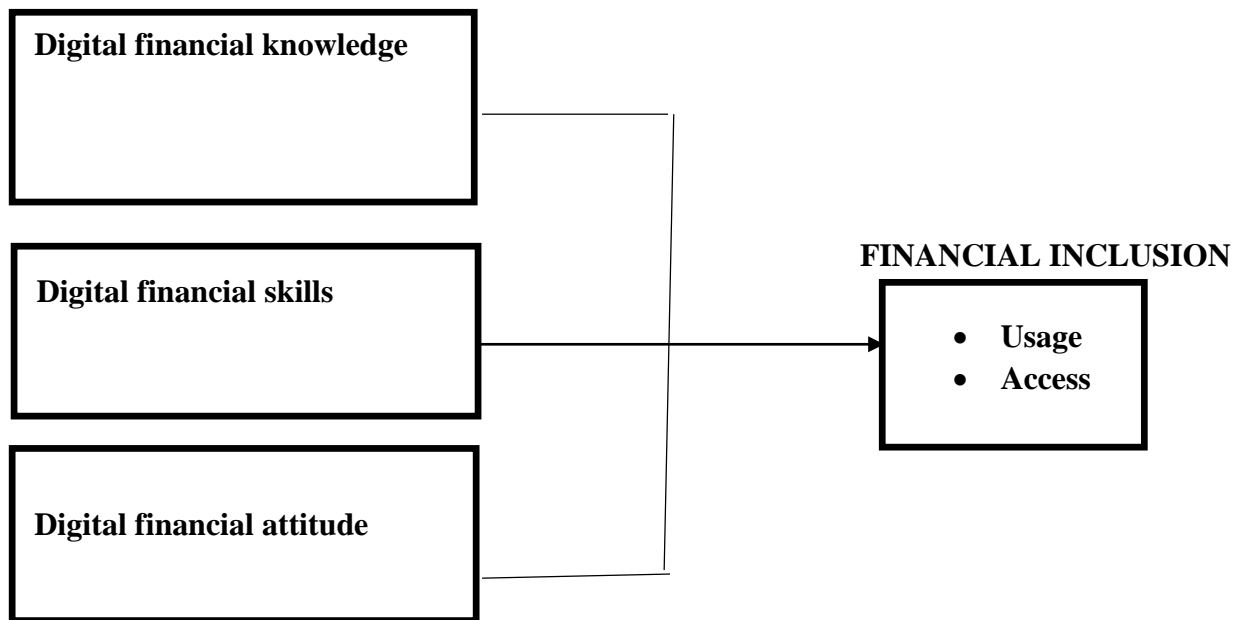
- i. What is the effect of digital financial knowledge on financial inclusion of SACCO members in Mawogola North in Sembabule District?
- ii. What is the effect of digital financial skills on financial inclusion SACCO members in Mawogola North in Sembabule District?
- iii. How does digital financial attitude affect financial inclusion SACCO members in Mawogola North in Sembabule District?

## 1.7 Conceptual Frame work

A conceptual framework, according to Maxwell (2016), is a collection of ideas, hypotheses, expectations, opinions, and theories that drive and support your research. The variables and the hypothesized link between them are highlighted in the figure 1 below.

**Figure 1** A conceptual framework showing digital financial literacy and financial inclusion.

### DIGITAL FINANCIAL LITERACY



**Adapted from** Lyons (2021) and Azeez & Akhtar (2021)

Digital financial literacy was conceptualized as having three components: digital financial knowledge, digital financial skills, and digital financial attitude. The dimensions of digital financial literacy were connected to the dependent variable's notions of financial inclusion (Azeez and Akhtar, 2021)

The researcher focused on digital financial knowledge, which includes knowledge of digital payments such as saving, lending, and remittances using mobile money; digital financial skills,

particularly the ability to use mobile money for financial transactions and agent banking; and digital financial attitude, which includes willingness to use mobile money transactions.

Lastly, financial inclusion was measured in terms of usage and access (BOU, 2017)

## **1.8 Study scope**

### **1.8.1 Content scope**

This study aimed at examining the effect of digital financial literacy on financial inclusion of SACCO members in Uganda. The study was conceptualized with three constructs of digital financial knowledge, digital financial skills and digital financial attitude looking at how they affect financial inclusion of SACCO members. This is because members with digital knowledge, digital financial skills of using digital platforms to obtain financial services tend to portray higher levels of financial inclusion.

### **1.8.2 Geographical scope**

The research was conducted in SACCO's in Mawogola north in Sembabule district in central Uganda. According to Sembabule district commercial officer, there are over 47 registered SACCOs in Sembabule District and 22 of them are in Mawogola county. Sembabule District is bounded to the north by Mubende, northeast by Gomba District, to the east by Bukomansimbi District, to the south by Lwengo District, to the southwest by Lyantonde District, and northwest by Kiruhura District.



### **1.8.3 Time scope**

This research was conducted over a 5-year period, from 2017 to 2021. The five-year period was chosen to allow for a critical examination of the data and supporting literature on financial inclusion of SACCO members in Uganda.

### **1.9 Significance of the study**

The research will help scholars understand how digital financial literacy influences financial inclusion.

The research findings will be of use to SACCO members in Mawogola North in Sembabule district as they will obtain information in regards to financial inclusion as well as management of SACCOs as the information obtained will be of help in making further decision and therefore enhance financial inclusion

The study findings will help policymakers, including the Bank of Uganda, the Micro Finance Support Center, and commercial banks, develop a clear strategy and supporting measures to increase financial inclusion.

### **1.10 Operational definitions of the study**

Digital financial literacy encompasses the acquisition of the necessary knowledge, abilities, and necessary attitude to effectively utilize digitally delivered financial products to make prudent financial choices (Alliance for Financial Inclusion, 2021a).

**Financial inclusion** refers to using and having access to appropriate, high-quality financial services that help one's financial sustainability (Life, 2019).

Digital literacy refers possessing knowledge, skills and capability operate digital devices such as mobile phones (*UNESCO, 2018*).

Digital literacy skills is the set of fundamental skills necessary for interacting with digital content, processing information, and retrieval (*UNESCO 2018b*).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presented the related literature on empirical and theoretical studies. The literature in this study was reviewed using empirical works and studies by other research scholars.

#### **2.2 Theoretical review**

This chapter describes theoretical perspectives that describe how digital financial literacy influences financial inclusion.

##### **2.2.1 Financial literacy theory**

Financial literacy theory contends that financial inclusion is realized via financial literacy trainings and education that improves citizens' financial knowledge and skills on financial matters to enhance financial inclusion. This argument asserts that financial literacy boosts individual's ability and readiness to participate in economic systems Ozili (2010).

Sajuyigbe et al. (2020), studied on financial literacy and financial performance of small-scale firms in Nigeria. In this study, financial literacy theory was employed and it advocated that if small and medium business owners are well-prepared with skills, they would be competent in personal account attainment of small companies in Nigeria.

Njehia (2014) carried out a study on the effects of financial literacy on personal financial management among Kenyan workers adopted the financial literacy theory in an attempt to explain how financial literacy assists in educating and empowering investors financial knowledge and how to apply the acquired knowledge to make rational decisions by assessing various products. Data

obtained was analysed using descriptive statistics. The results indicated that financial literacy had a positive impact on personal financial planning among Mumias Sugar Company workers.

Similarly, Kobugabe and Rwakihembo (2022) investigated the effect of financial literacy on financial inclusion among business owners in Fort Portal City. In their study, financial literacy theory was adopted. The results indicated a statistically strong and correlation between financial literacy and financial inclusion among business owners in Fort Portal City SMEs, with an adjusted R square value of 28%.

### **2.2.2 Cognitive dissonance theory**

The theory was advanced by Leon Festinger in 1957 as cited in Festinger and Holtzman (1978). The Cognitive Dissonance theory highlights how individuals strive to reduce psychological discomfort arising from conflicting beliefs, attitudes, or behaviors. In this study context, individuals may experience cognitive dissonance when they are aware of the advantages associated with using digital financial services such as cost effectiveness, convenience but lack the skills or knowledge to effectively use them (Tony and Desai 2020).

The theory asserts that in order to reduce cognitive dissonance, individuals are likely to take actions that align with their desired state of financial inclusion through seeking out resources to improve their understanding of digital financial tools, enrolling in digital literacy programs which enhances financial inclusion (Tony, 2020).

Tony and Desai (2020) examined the influence of digital financial literacy on financial inclusion in cognitive dissonance theory was adopted, a sample of 200 participants was employed to gather data using a systematic questionnaire. The study's findings showed a strong correlation between digital financial literacy and financial inclusion.

## **2.3 Conceptual review**

Financial inclusion of SACCO members is a dependent variable that is predicted by digital financial literacy.

### **2.3.1 Digital financial literacy**

The aspect of digital financial literacy has evolved globally and is a focus of discussion for researchers and policy makers. Lockdowns and curfews imposed to limit the risk of virus transmission, as a result, bank branches and SACCOs were closed in compliance with the restrictions. Government representatives and medical experts encouraged the usage of contactless cashless and means of making payments to mitigate the threat of virus transmission paving way for digital financial Services (Machasio, 2020).

Various scholars have studied and defined digital financial literacy Bansal (2019); (Morgan and Trinh (2020b).

Digital Financial Literacy is defined as gaining the knowledge, skills, self-belief, and capabilities in using financial products digitally delivered securely, to pursue better financial decisions (Alliance for Financial Inclusion, 2021b).

Mondal (2020) defined digital financial literacy as a process of gaining the necessary knowledge, skills, and habits for the efficient usage of digital content in financial transactions. This habit is acquired when a person's literacy level and ability to use digital devices or technology interact.

Liew et al. (2020) conducted a study on digital financial literacy among farmers in Sarawak where 252 respondents were sampled and a questionnaire adopted from Morgan 2019 was used. Findings indicated that respondents had intermediate understanding of digital financial products. According

to the same study, Fintech development had left the most underserved individuals in the country behind, and it therefore highlighted the need to enhance digital financial literacy to vulnerable populations through particular measures to enhance financial inclusion.

Prasad (2017) also conducted a study on digital financial literacy on household in Udaipur city of Rajasthan state in India where findings indicated that men had a higher level of familiarity with digital financial channels.

### **2.3.2 Financial inclusion**

According to MFPED/BoU (2017), financial inclusion refers to access to and use of a diverse variety of high-quality, low-cost financial services that assist in ensuring a user's financial stability. Ozili, (2020) conducted a study on financial inclusion around the world and results revealed financial innovation and stability, digital finance and poverty levels which are different across countries influenced financial inclusion.

Similarly, Akileng (2018) studied the determinants of financial inclusion among youth in Katakwi district in Uganda, using a multiple regression and a population of 3398 youths. Results indicated that financial innovation and financial literacy significantly influence financial inclusion. They concluded that financially literate individuals had a greater likelihood of making informed decisions.

## **2.4 Empirical literature**

This section is organised in line with the study objectives.

### **2.4.1 The effect of digital financial knowledge and financial inclusion**

Financial knowledge and digital financial knowledge are inextricably linked. As a result, having a basic knowledge of finance is necessary in order to understand digital financial knowledge (Normawati et al., 2021).

Financial knowledge is ability of individuals to understand and effectively apply financial principles. Individuals with financial expertise can ably make informed financial decisions (Selvia et al., 2021). Consumers with basic financial knowledge can comfortably manage their financial matters on their own and reacting properly to events and news that could have financial impact (Selvia et al., 2021). This is in agreement with Świecka, (2019) who defined financial knowledge as comprehension of financial procedures and principles, as well as employing such knowledge to solve financial difficulties.

Hasan (2021) studied the impact of financial knowledge concerning banking, microfinance, and fintech access in Bangladesh, and findings revealed that knowledge in relation to different financial services significantly influenced financial accessibility and inclusion.

In addition a study carried out by Selvia et al. (2021) on effects of financial knowledge on financial stability. The study employed purposive sampling where a total of 509 were sampled in Sumatra, Indonesia, utilizing an online survey circulated through social. Findings indicated that financial knowledge significantly impacted financial well-being and, subsequently, financial inclusion.

Mbwambo,Gasper and Mwashha (2020) examined the effects of financial knowledge and awareness on investment and saving decisions with 271 respondents chosen from government institutions in Mwanza using a multistage sampling technique. The study findings found out that attitude and financial knowledge significantly influenced saving and investment decisions. The study recommended that financial literacy policy campaigns have to be implemented in order to

enhance government employees' financial knowledge and attitude, allowing them to make sound investment decisions.

Arif and Khan (2019) conducted an empirical study on how knowledge and demographic variables have an impact on financial services usage in Pakistan. The study used a structured interview schedule to interview 150 heads of households from various parts of the country. Findings indicated that financial knowledge, trust and income levels positively influenced people's decisions to use financial services.

Saini (2019) emphasizes the critical need to raise citizen understanding of basic digital financial services, particularly in rural and semi-urban areas. He conducted study on digital financial literacy, level of awareness and access of digital financial products in Karnal city. In a study, 150 respondents from Karnal city were sampled using a structured questionnaire. To ensure reliability and validity, a pilot test and Cronbach's alpha were utilized, and descriptive statistics, ANOVA tests and correlation analysis revealed a strong and positive relationship between digital financial knowledge and use of digital financial transactions.

Shabna (2014) studied financial inclusion awareness and access of low-income households in Kerala. Using an interview schedule, data was collected from low-income households using multi-stage random sampling. According to the findings, BPL households are aware of financial inclusion efforts to some level, but only open bank accounts to take advantage of government incentives and schemes.

#### **2.4.3 Effects of digital financial skill on financial inclusion**

According to *UNESCO* (2018b) digital literacy skills is the set of fundamental skills necessary for interacting with digital content, processing information, and retrieval.



Findings by Ozili (2018), during his study on the effect of digital finance on financial inclusion revealed that digital finance has a significant positive effect on financial inclusion in developed and emerging economies.

Similarly, Stella (2019) studied the effects of digital finance on financial inclusion, multiple choice and Likert scale questions were carefully designed and Cronbach's alpha of 0.976 was computed. The study's findings showed a strong correlation between digital finance and financial inclusion. Though there were various drawbacks to digital finance, such as affordability, protection, and flexibility.

On contrary, Michelle (2016) studied digital finance skills and financial inclusion, descriptive statistics were utilized in the study. This study's target population included 44 Kenyan banks, including 43 commercial banks and sampled 13 Kenyan banks. This sample was purposefully chosen as a sufficient representation of the 13 Kenyan banks that provide all three digital financial services. Findings of the study revealed no correlation between digital finance and financial inclusion in Kenya's banking industry.

### **2.4.3 Effects of digital financial attitude on financial inclusion**

Normawati et al. (2021), defined attitude as an individual's feelings, thoughts, and preferences towards certain elements of objects, others, and events that are most evident, whether pleasant or unpleasant. The study emphasized that financial attitude refers to a way of thinking, feeling, and judging about money.

Yoopetch and Chaithanapat (2021) studied the effects of financial behavior and attitude on stock investment intentions. A sample of 300 respondents was selected and questions indicated that financial behavior and attitude positively influenced investment intentions. Findings indicated that

people with a positive financial attitude have a strong understanding of finance and manage their finances better to obtain financial stability and contentment.

An empirical study by Zainul (2018) on the effects of financial attitude and behavior on financial satisfaction of employees in Jakarta, Indonesia. Purposive sampling was employed in the sample approach. Data was collected by distributing an online questionnaire via Google questionnaire. Findings revealed that Financial Attitude positively influenced financial Satisfaction and subsequently financial inclusion.

## **2.5 Knowledge gap**

Many of the studies such as Liew et al. (2020), Stella (2019) and Saini (2019) seem to rely predominantly on quantitative research methods and have not considered the inclusion of qualitative research methods, such as interviews. This study therefore addressed the gap by employing both qualitative and quantitative methods to allow triangulation.

Most studies such as Tony and Desai (2020) have been guided by a single theory, a few of them have integrated two or more theories to explain the mechanisms through which digital financial literacy influences financial inclusion.

Many studies such as Rai et al. (2019), Azeez & Akhtar (2021) focused on urban settings yet exploring how digital financial literacy influences financial inclusion in rural areas such as Mawogola North, Sembabule district could provide valuable insights. As a result, the study aimed at addressing this knowledge gap by how digital financial literacy influences financial inclusion among SACCO members in Mawogola North.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This section covers the systematic and scientific steps performed during the study.

#### **3.2 Research design**

In this study, a cross-sectional survey approach was adopted, and data on study variables were collected across several firms at a specific point in time. According to Wang & Cheng (2020), many researchers have widely accepted and employed this design and found it appropriate since it is effective while gathering data from various enterprises at the same time.

#### **3.3 Study population**

The study constituted of a population of 2800 members from 22 SACCOs in Mawogola north county in Sembabule basing on the report from Sembabule district Local Government (Workplan, 2020). In this study a target population of 660 was selected basing on the minimum legal requirement of 30 members per Sacco. While this wasn't a perfect proxy for the population, this approach made it possible to systematically select a population to work with in the study. This area of research was selected because the Government of Uganda and international agencies have taken initiatives to boost Inclusion of SACCO members in the district through financial literacy information sharing groups(FLISG) to equip SACCO members with basic skills of financial literacy (Bank of Uganda, 2019). Also Care international through Pegasus assisted in the digitalization of two Sembabule District cooperatives: Sembabule Dairy and Livestock Cooperative and Nabitanga Dairy Cooperative to ease service delivery (Wakyiku & Adong, 2019).

### **3.4 Sample size**

Based on the sample size determination model developed by Krejci and Morgan (1970), a sample size of 242 respondents was selected from a population 660 members in 22 SACCOs. Mawogola north county constitutes of 3 sub counties namely Sembabule Town council, Mijwala sub county and Lugusuulu sub county. According to report from Sembabule district Commercial officer, Sembabule Town council has 16 registered SACCOs, Mijwala sub county has 3 SACCOs and 3 SACCOs in Lugusuulu. Of the 242 surveys distributed, 129 were valid and returned, bringing the response rate to 53%. A response rate of more than 50% is required for survey research and can be deemed suitable to provide trust in the study findings (Lindner & Wingenbach 2002).

### **3.5 Sampling technique**

The study used purposive sampling method. This entailed locating and selecting individuals who were knowledgeable or with specific expertise about digital financial literacy in order to provide justification to make generalisations from study's sample.

### **3.6 Data collection methods**

The study used both quantitative and qualitative methods. SACCO members were given questionnaires to collect quantitative data, while SACCO personnel were interviewed using interview guides to get qualitative data.

### **3.6.1 Quantitative method**

Quantitative data was collected using questionnaires distributed to SACCO members. This is because they allow data to be obtained from large samples in the shortest possible time and in a consistent manner.(Trial & Change, 2017). This instrument asked questions about all aspects of DFL as well as various measures of financial inclusion among SACCO members. The responses were gathered and categorized on a Likert scale.

### **3.6.2 Qualitative method**

With the help of interviews, qualitative data was collected from SACCO board members and staff in order to collect particular information for the research study. An interview guide was utilized while interviewing SACCO staff members about the study's objectives.

When interviewing SACCO Board members and staff, open-ended questions were utilized to collect detailed information and provide possibilities for probing (Elmusharaf, 2016). When interviewing the staff, confidentiality was preserved.

### **3.7 Procedure for data collection**

Following the approval of the research proposal, an introduction letter issued by the university was obtained, authorizing and introducing the researcher to various respondents in order to conduct the study. This is done to increase the study's authenticity and to give the research participants more confidence.

In addition, a pilot and preliminary study were conducted within the district to better understand the nature of these enterprises and their size structures. The researcher then presented the letter

from the university to the appropriate authorities in order to seek permission to carry out a study in their administrative area.

### **3.8 Measurement of the study variables**

The variables were measured using items that have been adjusted from past studies using similar constructs. Each variable is presented in the sections that follow, along with its associated items and sources of the items.

#### **3.8.1 Independent variable**

The study's independent variables were digital financial knowledge, digital financial skills, and digital financial attitude. Digital financial knowledge being the first predictor variable relates to awareness of available digital financial services. Digital financial knowledge will be measured in terms of awareness or having knowledge of digital payments like saving, lending and remittances using mobile money transactions, online banking, internet banking, peer to peer transfers ( Lyons, 2021).

Digital financial skills relate to practical know how of digital financial service applications, it will be measured in terms of; ability to use mobile money for financial transactions, online banking and internet banking (Azeez & Akhtar, 2021). These constructs were rated on a Likert scale with five possible outcomes: one being strongly disagreed with, two being strongly disagreed with, three being unsure, four being agree, and five being strongly agreed.

Digital financial attitude will be measured in terms of; Sacco member's willingness to use mobile money transactions that is to say using mobile money for saving, making payments and willingness to operate online banking ( Lyons, 2021). These constructs were rated on a Likert scale with five

possible outcomes: one being strongly disagreed with, two being strongly disagreed with, three being unsure, four being agree, and five being strongly agreed.

Lastly, financial inclusion as dependent variable was conceptualized in terms of Usage and Access (Shapoval et al., 2021). On a scale of one to five, with one being strongly disagreed with, two being strongly disagreed with, three being unsure, four being agree, and five being strongly agreed.

### **3.9 Validity and reliability**

Reliability and Validity are key factors to consider when assessing a measurement tool for a high-quality research study (Smith & Smith, 2018). Validity and reliability improve transparency while also removing prejudice from research (Wong & Yamat, 2020)

#### **3.9.1 Validity**

Validity refers to the correctness of a tool in measuring the predicted construct within a research study (Wong & Yamat, 2020). It is an instrument's ability to precisely measure what it purports to measure. After data collection, for further analysis construct validity was employed in the study to investigate how related constructs relate to one another while assessing a specific variable using factor analysis (Taherdoost, 2016). All factor loadings exceeded the recommended cutoff point of 0.50 (Nunnally, 1978), and all of the items were taken into account for the final study.

**Table 3.1 Factor analysis of the study variables, their measures and factor loadings**

<b>Variable Measure</b>	<b>Factor loading</b>
<b>Digital financial Knowledge</b>	
I am aware that use of mobile banking can ease access to a number of banking services	.664
I am aware of all the money saving services available to me via mobile	.542
I am informed of the security risks associated with using mobile banking such as hackers	.867
I am aware that changing my mobile money password regularly can minimize security risks	.782
<b>Digital financial skills</b>	
I am without any difficulty accessing online banking services	.806
I am able to make money transfers via mobile money	.682
I can ably use mobile banking to access financial services from my financial institution	.669
I can ably apply for a loan from my financial institution through a mobile phone	.537
I am without any difficulty saving money via mobile money	.706
<b>Digital financial attitude</b>	
I find it easy to use agency banking to access my bank services	.741
I find it easy to acquire a loan via mobile money	.558
I find it easy to deposit money on my account using mobile banking	.815
I am often prepared to deal with any security risks associated with mobile banking	.852
I am willing to receive financial updates from my financial institution via a mobile phone	.617
<b>Financial inclusion</b>	
I often pay for bills using mobile money	.636
I can easily access loans from the financial institutions at anytime	.807
My savings with the financial institution have grown over the years	.821
The cost of borrowing from financial institutions is affordable today	.608



As indicated in table 3.1 above, only items whose factor loadings met the threshold of 0.5 were considered for further analysis.

### **3.9.2 Reliability**

According to Long and Johnson (2000), reliability refers to how consistently a research tool generates results after numerous trials. The Cronbach's alpha coefficient was computed for each variable employed in this study to examine the research instrument's internal consistency. The tool was pre-tested for reliability and validity, and those found to be unsuitable for measuring variables were amended to improve the research instruments' quality. The variables' Cronbach's alpha coefficients are presented in the table below.

**Table 3.2 Cronbach's alpha for the study variables**

<i>Variable</i>	<i>Cronbach's Alpha coefficient</i>
Digital financial knowledge	.701
Digital financial skills	.698
Digital financial attitude	.771
Financial inclusion	.701

*Source: Primary data 2022*

Results in table 3.2 above, all variables used in the study fulfilled the expected threshold of 0.7 Cronbach alpha with the exception of digital financial skills, which had a Cronbach Alpha of 0.698 which is approximately 0.7 and therefore deemed satisfactory (Cronbach, 1951).

### **3.10 Data analysis**

In order to improve the study's conclusions, both quantitative and qualitative data analysis were employed in the study for triangulation, guaranteeing that the flaws of one method of data collection were countered by the advantages of the other (Singh Kultar, 2007).

#### **3.10.1 Quantitative data analysis**

Prior to analysis, the obtained data was cleaned, coded, and analysed using SPSS. Standard deviation and mean were computed using descriptive statistics, and then regression and correlation analysis were performed.

#### **3.10.2 Qualitative data analysis**

The qualitative data gathered using interviews was reviewed on a regular basis for increased completeness and accuracy of the results. The qualitative data was sorted into relevant information, which was then analysed to support the quantitative data.

### **3.11 Diagnostic tests**

Prior to analysis, normality tests were performed in the study to ensure that the data was distributed normally. The Shapiro-Wilk Test, invented in 1965 by Samuel Sanford Shapiro and Martin Wilk, was employed to check for normality in the study since it is suitable for small samples. A Shapiro-Wilk test for this study ( $*p>0.05$ ).

Multi-collinearity tests were also performed to check for collinearity among the independent variables employed in this study (Harrison, 2017).

The Variance Inflation Factor was calculated to determine the degree to which variance of a regression coefficient is inflated due to multicollinearity in the model. When the VIF exceeds 5, it indicates a high degree of collinearity (Harrison, 2017).

**Table 3.3 Collinearity diagnostics**

<i>Model</i>	<i>Collinearity Statistics</i>	
	<i>Tolerance</i>	<i>VIF</i>
Digital financial knowledge	.575	1.740
Digital financial skills	.479	2.090
Digital financial attitude	.431	2.318

a. Dependent Variable: Financial inclusion

*Source: Primary data 2022*

As indicated in table 3.3, multicollinearity tests were performed to establish whether the independent variables were highly collinear with one another by computing Variance Inflation Factor (VIF). The findings, as displayed above, indicated that there were no collinearity issues because the VIF for the various variables was below threshold of 5.

### **3.12 Ethical consideration**

According Akaranga and Makau (2016) , Ethics are the standards of conduct that serve as a guide when it comes to a study's consideration of the rights of those who become its topic. This study sought authorization from the Directorate of Graduate School of Kyambogo to continue data collection. All necessary standards and suggestions were implemented into the data collection procedure to protect the study participants.

Furthermore, for the qualitative study in which interviews were done, prior agreement from each participant was obtained before being included in the study to guarantee that individuals actively participate in the study. Lastly, by concealing their identities and other personal information, the study assured absolute confidentiality of people taking part in the interview procedure. This was accomplished by employing codes to identify individuals and SACCOs engaged.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

#### 4.1 Introduction

This chapter presents, analyses, and interprets the study's findings.

#### 4.2 Characteristics of respondents

This section describes the demographics of the respondents who participated in the research study.

**Table 4.1 Sample characteristics**

	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
Sex for respondents	Male	61	47.3
	Female	68	52.7
Age of respondents	Less than 24 years	14	10.9
	25-29	32	24.8
	30-34	44	34.1
	35-39	17	13.2
	40-44	14	10.9
	45-49	6	4.7
	50 years and above	2	1.6
	Educational background	O level	25
A level		48	37.2
Certificate		18	14.0
Diploma		17	13.2
Degree		17	13.2
Others		4	3.1
Number of years as a member of the financial institution	Less than 5 years	52	40.3
	5-9 years	41	31.8
	10-14 years	27	20.9

	15-19 years	8	6.2
	20-24 years	1	.8
Respondents who own a phone	Yes	129	100.0
The frequency of paying bills using mobile money	Regularly	61	47.3
	Sometimes	47	36.4
	Rarely	19	14.7
	Never	2	1.6
	Savings frequency on your mobile money account	Regularly	49
	Sometimes	62	48.1
	Rarely	17	13.2
	Never	1	.8
<b>N=129</b>			

---

***Source: Primary data 2022***

According to results from Table 4.1 above, respondents' gender was evenly distributed, with females constituting 52.7% and males 47.3% of the total respondents. Regarding age, respondents between 30 and 34 years constituted the highest percentage (34.1%), followed by those who are between 25 and 29 years with 24.8%. Those between 35 and 39 years were 13.2%, and those aged 44 to 49 were 10.9%. In terms of level of education, respondent who owned certificates constituted 14.0%, 13.2% diplomas, 13.2% degrees, 37.2% A 'level, and 19.4% O'level, with others accounting for 3.1%.

Regarding the length of time they had been members of the financial institution majority of respondents about 40.3% had been SACCO members for less than 5 years, 31.8% had been members for over 5 years but less than 9 years and the rest constituting 27.9 % had been SACCO members for over 10 years. All respondents owned a phone.

Further, when asked how often they paid for bills with mobile money, 47.3% said they did so frequently, 36.4% said they did so occasionally, 14.7% said they rarely, and 1.6% indicated that they had not used mobile money before. And Finally, when asked how frequently they saved

money using mobile money, 38% replied regularly, 48.1% said sometimes, 13.2% said rarely, and 0.8% stated never.

### 4.3 Descriptive statistics of the study variables

This section comprises descriptive statistics for the variables under consideration.

#### 4.3.1 Digital financial knowledge

The table below shows the descriptive statistics relating to the different items of digital financial knowledge.

**Table 4.2 Descriptive statistics of digital financial knowledge**

	<i>Mean</i>	<i>Std. Deviation</i>
I am aware that use of mobile banking can ease access to a number of banking services	3.90	.942
I am aware of all the money saving services available to me via mobile	3.87	.860
I am informed of the security risks associated with using mobile banking such as hackers	3.83	.961
I am aware that changing my mobile money password regularly can minimize security risks	4.16	.705
<b>Grand mean</b>	<b>3.94</b>	
<b>N=129</b>		

*Source: Primary data 2022*

The responses were rated on a Likert scale with five possible outcomes: one being strongly disagreed with, two being strongly disagreed with, three being unsure, four being agree, and five

being strongly agreed. S.D. denotes the degree to which individual responses deviate from the mean.

From Table 4.2 above, the majority of the respondents agreed that they were aware that changing their mobile money password on a regular basis can reduce security risks, (Mean = 4.16, S. D = 0.705), while the mean and standard deviation for the aspect of using mobile banking to access a variety of banking services were 3.90 and 0.942 respectively. The participants also concurred, with a mean of 3.87 and a standard deviation of 0.860, that they were aware of all the money-saving services available to them through mobile money.

With (Mean = 3.83, S. D = 0.961), respondents still agreed that they were informed of the security risks associated with using mobile banking, such as hackers.

This finding relates with the detailed discussion from the interviews with the SACCO Manager. When asked to give a detailed analysis of whether digital financial knowledge exists amongst SACCO members, the Finance Manager had this to say;

*“...presently, digital financial knowledge is highly required amongst SACCO members. The major focus should be on creation of awareness on the existence of digital transaction means such as savings and investment without necessarily one visiting the premises. As a SACCO we have promoted digitalization where majority of our services can be accessed electronically. Our customers prefer mobile banking because it eases access to a variety of services. Most of them know how to save using their mobile phones and they are very security cautious. Each one is aware of need to have secret passwords for security reasons.”* (Finance Manager One)

#### **4.3.2 Digital financial skills**



The mean and standard deviation relating to digital financial skills are shown below

**Table 4.3 Descriptive statistics of digital financial skills**

	<i>Mean</i>	<i>Std. Deviation</i>
I am without any difficulty accessing online banking services	3.24	1.109
I am able to make money transfers via mobile money	4.06	.836
I can ably use mobile banking to access financial services from my financial institution	3.84	.917
I can ably apply for a loan from my financial institution through a mobile phone	3.71	.971
I am without any difficulty saving money via mobile money	3.99	.940
<b>Grand mean</b> <b>N=129</b>	<b>3.768</b>	

*Source: Primary data 2022*

The responses were scored a Likert scale with five possible outcomes: one being strongly disagreed with, two being strongly disagreed with, three being unsure, four being agree, and five being strongly agreed.

According to Table 4.3, most respondents were able to make money transfers via mobile money (Mean = 4.06, S. D = 0.836), and most respondents did not have any difficulty saving money via mobile money, as revealed by mean scores of 3.99 and standard deviation of 0.940. Furthermore, the findings revealed that respondents could effectively use mobile banking to access financial services from their financial institution (Mean = 3.84, SD = 0.917). With a mean score of 3.71 and a standard deviation of 0.971, respondents were also able to apply for a loan from a financial institution via mobile phone. Finally, respondents had average skills in accessing online banking services, with a mean score of 3.24 and a standard deviation of 1.109.

Accordingly, the finding relates to detailed response from the interview which was conducted with the SACCO manager. When asked to comment on the existence of digital financial skills among SACCO members. The SACCO manager indicated that;

*“...digital financial knowledge alone is not enough; digital financial skills are also paramount. We support all our SACCO members on how to access online banking and mobile money services. They can make money transfers from the accounts into mobile money at any time. They are also able do online application for loans and as well save through mobile money. We look forward to enhancing digital skills more and more among all our SACCO members.” (Manager Two).*

#### **4.3.3 Digital financial attitude**

Regarding participants' level of digital financial attitudes, respondents offered their opinions regarding how strongly they with the following statements in an effort to determine the findings on these objectives. I find it simple to use agency banking to access my bank's services, to apply for a loan using mobile money, to deposit money into my account using mobile banking, to deal with any security risks associated with mobile banking, and to receive financial updates from my financial institution via a mobile phone.

**Table 4.4 Descriptive statistics of digital financial attitude**

	<i>Mean</i>	<i>Std. Deviation</i>
I find it easy to use agency banking to access my bank services	3.76	1.095
I find it easy to acquire a loan via mobile money	3.91	.857
I find it easy to deposit money on my account using mobile banking	3.84	.972
I am often prepared to deal with any security risks associated with mobile banking	3.53	1.054
I am willing to receive financial updates from my financial institution via a mobile phone	4.09	.852
<b>Grand mean</b>	<b>3.826</b>	
<b>N=129</b>		

*Source: Primary data 2022*

#### **Note**

The responses were scored on a Likert scale with five possible outcomes: one being strongly disagreed with, two being strongly disagreed with, three being unsure, four being agree, and five being strongly agreed.

Results from Table 4.4 above revealed that most of the SACCO members were willing to receive financial updates from my financial institution via mobile phone, resulting in the highest mean score of 4.09 with a standard deviation of 0.852. It was also discovered that respondents perceived it to be simple to obtain a loan via mobile money (Mean = 3.91, SD = 0.857).

Findings further reveals that the majority of respondents (Mean = 3.84 and SD = 0.972) find it easy to deposit money into their account using mobile banking. Members also indicated, with a mean score of 3.76 and a standard deviation of 1.095, that they find it easy to use agency banking to access their bank services. Finally, respondents who were often prepared to deal with any

security risks associated with mobile banking had a mean score of 3.53 with a standard deviation of 1.054.

#### 4.3.4 Financial inclusion

In case of financial inclusion, participants were asked to give their views about their degree of financial inclusion. Table 4.5 below presents variations in the financial inclusion of SACCO members in regards to a number of measurement items which include; I often pay for bills using mobile money, I can easily access loans from the financial institutions at any time, my savings with the financial institution have grown over the years, the cost of borrowing from financial institutions is affordable today.

The results of descriptive statistics regarding the different items of financial inclusion are shown below.

**Table 4.5** Descriptive Statistics of Financial inclusion.

	<i>Mean</i>	<i>Std. Deviation</i>
I often pay for bills using mobile money	4.27	.682
I can easily access loans from the financial institutions at anytime	3.38	1.213
My savings with the financial institution have grown over the years	3.43	1.110
The cost of borrowing from financial institutions is affordable today	3.61	1.063
<b>Grand mean</b>	<b>3.673</b>	
<b>N=129</b>		

*Source: Primary data 2022*

As indicated in Table 4.5 above, participants that use mobile money to pay their bills frequently, had a mean score of 4.27 and a standard deviation of 0.682. SACCO members also perceive that the cost of borrowing from financial institutions is affordable, with a mean score of 3.61 and a standard deviation of 1.063. Further, results revealed that respondents' savings at the financial institution had increased over time (mean =3.43 and SD =1.110).

#### 4.4 Correlation analysis

Pearson correlation coefficient was used to explain the relationship between each variable, as shown below.

**Table 4.6** Correlations between study variables

<b>Variables</b>	Digital Knowledge	Digital skills	Digital attitude	Financial inclusion
Digital financial Knowledge	1			
Digital financial skills	.570**	1	.	
Digital financial attitude	.626**	.702**	1	
Financial inclusion	.606**	.535**	.626**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).  
**N=129**

Table 4.6 indicates that there is a significant but moderately positive link between digital financial literacy, digital financial skills, and financial inclusion. This is demonstrated by Pearson correlation coefficients of 0.606 and 0.535, respectively, at the 0.01 significance level. The study's results showed a moderately positive association between digital financial attitude and financial inclusion, with a Pearson correlation coefficient of 0.626 and (P<0.01).

#### 4.5 Regression analysis

Regression analysis was employed to analyse the effects of digital financial literacy on financial inclusion. To achieve accurate results, a number of assumptions for the regression analysis were tested including the assumption of normality and multi-collinearity tests.

#### 4.5.1 Regression analysis for the effects of digital financial knowledge on financial inclusion.

**Table 4.7 Regression results**

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.465	.297		4.925	.000
	Digital financial Knowledge	.641	.075	.606	8.592	.000
<b>Model summary</b>						
R- Square= .368						
Adjusted R -Square=.363						
R= .606 <sup>a</sup>						
F-Value=73.825						
Sig=000 <sup>b</sup>						
a. Dependent Variable: Financial inclusion						
b. Predictors: (Constant), Digital financial Knowledge						
<b>N=129</b>						

*Source: Primary data 2022*

Based on model summary statistics in table 4.7, a p-value = 0.000, reveals that digital financial knowledge positively predicts financial inclusion, and the effect is significant at p-value 0.05.

The adjusted R square explain up to 36.3% of the variance in financial inclusion of SACCO members (Adjusted R<sup>2</sup>=0.363). Additionally, data reveals that digital financial knowledge had a significant positive effect ( $\beta=0.641$ ), suggesting that a unit increase in digital financial knowledge results in an average increase in financial inclusion of Sacco members by 0.641

Therefore, from the results one can argue out that digital financial knowledge significantly contributes to financial inclusion of SACCO members. With the world becoming largely dependent on technology, SACCOs that take advantage of technology to enhance digital financial knowledge of its members are likely to register a significant increase in financial inclusion.

#### 4.5.2 The effect of digital financial skills on financial inclusion

The regression analysis was performed to establish the effect of digital financial skills on financial inclusion. The table below shows the results from the analysis.

**Table 5.** Regression modal summary and coefficients for the influence of digital financial skills on financial inclusion of SACCO members.

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1(Constant)	1.641	.332		4.934.000	
Digital financial skills	.614	.086	.535	7.142.000	
R Square=.287					
Adjusted R Square=.281					
R=.535 <sup>a</sup>					
Sig=000 <sup>b</sup>					
F-Value=51.014					

a. Dependent Variable: Financial inclusion

b. Predictors: (Constant), Digital financial skills

**N=129**

*Source: Primary data 2022*

Findings from Table 4.8 indicated that the model fits the data well (F-statistic=51.014, p-value0.05). The adjusted R square explain up to 28.1% variations in financial inclusion (Adjusted R2=0.281). Further, results show that digital financial skills have a positive and significant effect on the financial inclusion of SACCO members ( $\beta =0.614$ ).

#### 4.5.3 Regression analysis for the effect of digital financial attitude on the financial inclusion

**Table 4.9 Regression modal summary and coefficients results**

Model	Coefficients <sup>a</sup>				
	Unstandardized		Standardized		
	B	Std. Error	Coefficients	t	Sig.
1 (Constant)	1.738	.253		6.867	.000
Digital financial attitude	.588	.065	.626	9.039	.000

**Modal summary**  
R-Square=.391  
Adjusted Square=.387  
F- Value=81.706  
Sig=.000<sup>b</sup>  
R=.626<sup>a</sup>

a. Dependent Variable: Financial inclusion  
b. Predictors: (Constant), Digital financial attitude

**N=129**

*Source: Primary data 2022*

Table 4.9 findings indicate that digital financial attitude explains up to 38.7% variations in financial inclusion (Adjusted R<sup>2</sup>=0.387). Findings also reveals that digital financial attitude positively affect SACCO members' financial inclusion, as demonstrated by  $\beta=0.588$ .

**4.5.4 Regression analysis for the effect of digital financial literacy and financial inclusion of SACCO members in Mawogola North County, in Sembabule district.**

**Table 4.10** Multiple regression analysis

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
-------	-----------------------------	---------------------------	---	------



	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
Constant	.913	.317		2.881	.005
Digital financial Knowledge	.349	.091	.331	3.860	.000
Digital financial skills	.119	.108	.104	1.105	.271
Digital financial attitude	.325	.093	.346	3.497	.001
R-square = .472					
Adjusted R-square = .460					
F value =37.321					
Sig= .000 <sup>b</sup>					

a. Dependent Variable: Financial inclusion

**N=129**

***Source: Primary data 2022***

The regression model was statistically significant, according to the regression analysis results in Table 4.10, with a F value of 37.321 and a P value of 0.000. Findings also show that, when combined, digital financial knowledge and digital financial attitude were strong predictors of financial inclusion of SACCO members in Mawogola North County, in Sembabule District ( $P < 0.05$ ), whereas digital financial skill was insignificant with a P-value of 0.271. However, the three variables explain 46% variance in financial inclusion by SACCO members in Mawogola North County, in Sembabule District (adjusted R-square =.460,  $p < .05$ ).

Digital financial knowledge emerged to be the strongest predictor of financial inclusion among SACCO members (Beta =0.349, P value =0.000). This was followed by digital financial attitude (Beta=0.325, P value= 0.001).

## CHAPTER FIVE

### DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This section presents the study's findings, conclusions, and recommendations.

#### 5.2 Summary of findings

Basing on the findings of the study in the previous chapter, results revealed that most of the SACCO members in Mawogola North county in Sembabule District agreed that digital financial knowledge positively influences financial inclusion. This revealed by a grand mean of 3.94 which approximately to 4.0 indicating that digital financial knowledge was supported by most of the SACCO members. From the grand mean of 3.768, the majority of them still agreed digital financial skills influences financial inclusion SACCO members. With the aspect of digital financial attitude, the majority of the SACCO members that were included in the study agreed that having the required digital financial attitude positively affected financial inclusion of SACCO members in Mawogola North county. This is explained with a grand mean of 3.826.

The correlations conducted results indicated a moderate but statistically significant association between digital financial knowledge and financial inclusion ( $r=0.606$ ,  $P<0.01$ ). Secondly, digital financial skills revealed a moderate but statistically significant relationship with the level of financial inclusion ( $r=0.535$ ,  $P<0.01$ ).

The correlation results also demonstrated that digital financial attitude had a moderate but statistically significant effect on financial inclusion of SACCO members ( $r=-0.626$ ,  $P<0.01$ ).

Basing on the regression performed, the findings show that digital financial knowledge and digital financial skills explain variations in financial inclusion of SACCO members by 36.3% and 28.1% respectively, while digital financial attitude explained variability in financial inclusion by 38.7%. However, digital financial knowledge was observed to be a strong significant (Beta= 0.641).

### **5.3 Discussion of findings**

This section describes how the study's findings relate to the literature that was reviewed.

#### **5.2.1 The effects of digital financial knowledge on financial inclusion**

The study's findings from a regression analysis indicate that digital financial knowledge has a significant and positive effect on financial inclusion. According to the study, digital financial knowledge predicts and explains 36.3% variability in financial inclusion of SACCO members in the study context, (adjusted R square = 0.363).

The findings also indicated that digital financial knowledge emerged to be the strongest predictor of financial inclusion among SACCO members when other variables were included (Beta = 0.349, P value = 0.001). This means that a unit increase in digital financial knowledge will result into 0.349 increase in the financial inclusion.

This therefore implies that where SACCO members have digital financial knowledge, they are much more aware of current digital financial products, which are critical for financial inclusion.

Furthermore, considering the increasing rate of literacy among Ugandans, with 74% of the population possessing a mobile phone (UBOS, 2020). Financial institutions such as SACCOs should capitalize on this advantage to enhance financial inclusion among individuals.

Considering the assertions of financial literacy theory, it's evident that increasing citizens' financial knowledge through financial literacy training is the best way to achieve financial inclusion.

The findings of the study concur with the findings of the previous study by Saini (2019) that also established a statistically positive effect of digital financial knowledge on digital financial transactions, which is a measure of financial inclusion. He found out that the greater the citizen understanding of basic digital financial services, the greater the degree of awareness and access of digital financial products in Karnal city. Kuruvilla and Harikumar (2020) also concluded that female entrepreneurs' financial inclusion in Kottayam district was influenced by financial knowledge . Similarly, an empirical study by Hasan et al. (2021) on banks in Bangladesh found out that knowledge in relation to different financial services significantly influenced financial inclusion.

### **5.2.2 The effects of digital financial skills on financial inclusion**

The study's findings revealed that digital financial skill significantly influences financial inclusion. This implies that SACCO members who can ably transact using digital devices for mobile money transactions and mobile banking, among others, are more likely to access and use these financial products, thereby being financially included. The study findings concur with those of Ozili (2018) who found out that digital financial skills has a significant positive effect on financial inclusion in developed and emerging economies, which concurs with Stella (2019), whose study indicated a significant positive relationship between digital finance and financial inclusion in banking industry.

### **5.2.3 The effects of digital financial attitude on financial inclusion**

The study revealed that digital financial attitude has a significant and positive effect on financial inclusion.

The study findings concur with the findings of the previous studies such as; Rai et al. (2019) established that financial attitude had a stronger and positive relationship with working women's financial literacy and financial inclusion in Delhi, India. Their study concluded that India's financial literacy agencies concentrate more on enhancing women's financial attitude to enhance financial inclusion.

Yoopetch and Chaithanapat (2021), found out that financial attitude and financial behavior positively influenced investment intentions which is a measure of financial inclusion. They concluded that individuals having positive financial attitude are more likely to have a strong understanding of finance as well as managing their finances better to enhance financial inclusion.

### **5.3 Conclusions**

Findings revealed that digital financial knowledge was the strongly predicted financial inclusion of SACCO members in Mawogola North County, followed by digital financial attitude and, finally, digital financial skills. This implies Digital financial literacy contributes to financial inclusion of SACCO members

### **5.4 Recommendations**

According to the study findings, the study recommended the following.

Despite the Government's increased emphasis on boosting financial inclusion through programs like Emyooga and the Parish development model, the Government of Uganda should invest in boosting financial literacy knowledge and skills to SACCO members across the country. This should include basic training on how to use smartphones, mobile apps.

Furthermore, favorable regulatory environments and good supervisory practices should be established by the government to enable innovation in mobile transfer services across the country, giving rise to an entire digital financial services ecosystem.

SACCOs should educate members about the security measures in place to protect their digital transactions. Building trust is crucial in attitude change and encourage members to use digital services confidently.

### **5.5 Areas for further research**

Because this study was limited to a cross-sectional survey design, other future researchers can perform a longitudinal study to determine whether the same findings can be obtained in the same area of study. Future research could use a larger sample size to generalize this conclusion to the entire country.

The research only looked at three aspects of digital financial knowledge, digital financial skills, and digital financial attitude. However, there are several elements that digital financial literacy encompasses. Consequently, additional research should be conducted among the population on those other dimensions in order to generalize the findings and fully investigate the relationships and effects that exist between digital financial literacy and financial inclusion.

## REFERENCES

- Akaranga, S. I., & Makau, B. K. (2016). *Ethical Considerations and their Applications to Research : a Case of the University of Nairobi*. 3, 1–9.
- Akileng, G., Lawino, G. M., & Nzibonera, E. (2018). Evaluation of determinants of financial inclusion in Uganda. *Journal of Applied Finance & Banking*, 8(4), 1792–6599.
- Alliance for Financial Inclusion. (2021a). *Digital Financial Literacy Research Paper*. 45, 24.
- Alliance for Financial Inclusion. (2021b). *Digital Financial Literacy Toolkit*. 25.
- Arif, M., & Khan, M. Z. (2019). *Financial knowledge and Literacy or Demographics : What determines the use of Financial Services in Pakistan ?* 12(January).  
<https://doi.org/10.17485/ijst/2019/v12i4/140213>
- Azeez, N. P. A., & Akhtar, S. M. J. (2021). *Digital Financial Literacy and Its Determinants : An Empirical Evidences from Rural India*. 11(2), 8–22.  
<https://doi.org/10.9734/SAJSSE/2021/v11i230279>
- Baguma David. (2015). *The State of Microfinance in Uganda*. 60. [www.amfiu.org.ug](http://www.amfiu.org.ug)
- Bank of Uganda. (2019). *Core Messages Strategy for Financial Literacy in Uganda*.
- Bank, W. (2020). *Digital Solutions in a*.
- Bansal, P. (2019). *A Conceptual Framework For Digital Financial Literacy*. 12, 53–56.
- BoU. (2019). for Financial Core Messages Literacy. *BoU*.
- BOU. (2014). *Status of Financial Inclusion in Uganda*. March, 25.  
[https://www.bou.or.ug/bou/bou-downloads/Financial\\_Inclusion/Report-on-the-State-of-Financial-Inclusion-First-Edition-March-2014.pdf](https://www.bou.or.ug/bou/bou-downloads/Financial_Inclusion/Report-on-the-State-of-Financial-Inclusion-First-Edition-March-2014.pdf)
- BOU. (2017). *The Republic of Uganda National Financial Inclusion Strategy 2017-2022*. 74.  
[https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/publications/special\\_pubs/2017/](https://www.bou.or.ug/bou/bouwebsite/bouwebsitecontent/publications/special_pubs/2017/)



National-Financial-Inclusion-Strategy.pdf

Brochado, A., & Mendes, V. (2021). Savings and financial literacy: a brief review of selected literature. *CICEE - Working Papers Series, I(1)*, 61–72. <https://doi.org/10.26619/ual-cicee/wp05.2021>

Carolina Sandra, B. F. (2013). *Linking Financial Inclusion and Development*. 1–38.

Cojoianu, T. F., Clark, G. L., Hoepner, A. G. F., Pažitka, V., & Wójcik, D. (2020). Fin vs. tech: are trust and knowledge creation key ingredients in fintech start-up emergence and financing? *Small Business Economics*. <https://doi.org/10.1007/s11187-020-00367-3>

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16(3)*, 297–334. <https://doi.org/10.1007/BF02310555>

Document, C. B. (2020). *Policy, regulatory, and supervisory covid-19 responses for microfinance*. June.

Elmusharaf, K. (2016). *Qualitative Training Course in Sexual and*. October.

European Commission. (2013). *Communication From the Commission: Financial Education*. Brussels.

Festinger, L., & Holtzman, J. D. (1978). Retinal image smear as a source of information about magnitude of eye movement. *Journal of Experimental Psychology: Human Perception and Performance*, *4(4)*, 573–585. <https://doi.org/10.1037/0096-1523.4.4.573>

Finke, M. S., Howe, J. S., & Huston, S. J. (2017). Old age and the decline in financial literacy. *Management Science*, *63(1)*, 213–230. <https://doi.org/10.1287/mnsc.2015.2293>

Finscope. (2018). *FinScope Topline Findings Report*. June, 1–31. <http://fsduganda.or.ug/wp-content/uploads/2018/10/FinScope-Uganda-Survey-Report-2018.pdf>

Harrison, P. (2017). *Multicollinearity and Regression Analysis Multicollinearity and Regression*

*Analysis.*

- Hasan, M., Le, T., & Hoque, A. (2021). How does financial literacy impact on inclusive finance? *Financial Innovation*, 7(1). <https://doi.org/10.1186/s40854-021-00259-9>
- Kasalirwe, F., & Lokina, R. (2016). *Financial Literacy and Household Investment Choices in Uganda*.
- Kobugabe, C., & Rwakihembo, J. (2022). Financial Literacy and Financial Inclusion: A positivist view of Proprietors of Small and Medium Enterprises in Fort Portal City, Western Uganda. *American Journal of Finance*, 7(2), 1–12. <https://doi.org/10.47672/ajf.1014>
- Kovács, L., & Terták, E. (2019). *Financial Literacy: Theory and Evidence*. 150. [http://www.bankszovetseg.hu/Public/publikacio/Financial literacy.pdf](http://www.bankszovetseg.hu/Public/publikacio/Financial%20literacy.pdf)
- Liew, L., Piaw, T., Lim, D., Wen, P., Yew, L., & Melissa, C. (2020). Digital Financial Literacy : a Case Study of Farmers From Rural Areas in Sarawak. *International Journal of Education and Pedagogy*, 2(4), 245–251. <http://myjms.mohe.gov.my/index.php/ijeap>
- Life, T. O. (2019). *Member Series : Financial Inclusion Journey Uganda ' S Journey to Inclusive Finance through Digital Financial Services*.
- Lindner, J. R., & Wingenbach, G. J. (2002). Communicating the handling of nonresponse error in journal of extension research in brief articles. *Journal of Extension*, 40(6).
- Long, T., & Johnson, M. (2000). *Rigour , reliability and validity in qualitative research*. 30–37.
- Lyons, Kass-Hanna and Fava. (2021).
- Lyons, A. C. (2021). *A methodological overview to defining and measuring “ digital ” financial literacy*. April, 1–19. <https://doi.org/10.1002/cfp2.1113>
- Lyons, A., & Kass-Hanna, J. (2021). A Multidimensional Approach to Defining and Measuring Financial Literacy in the Digital Age. *SSRN Electronic Journal*, 1–23.

<https://doi.org/10.2139/ssrn.3873386>

- Machasio, I. N. (2020). COVID-19 and Digital Financial Inclusion in Africa: How to leverage digital technologies during the pandemic. *Africa Knowledge in Time Policy Brief, 1, No.4*, 1–7.
- Matewos, K. R., Navkiranjit, K. D., & Jasmindeep, K. (2016). Financial literacy for developing countries in Africa: A review of concept, significance and research opportunities. *Journal of African Studies and Development, 8*(1), 1–12. <https://doi.org/10.5897/jasd2015.0331>
- Mbwambo H, Gasper L, Mwashu N, M. A. (2020). 2018–2020.
- Michelle, A. M. (2016). *The Effect of Digital Finance on Financial Inclusion in the Banking Industry in Kenya. November.*
- Mondal, S. (2020). *Digital Financial Inclusion and Inclusive Development of India. 5*(3), 1054–1059.
- Morgan, P., & Trinh, L. (2020a). *The Need to Promote Digital Financial Literacy for the Digital Age Bihong Huang ( Asian Development Bank Institute ). June 2019.*
- Morgan, P., & Trinh, L. (2020b). *The Need to Promote Digital Financial Literacy for the Digital Age Bihong Huang ( Asian Development Bank Institute ). June 2019, 1–9.*
- Mpiira, B., K., E., K., J., R. S. T., C., S., & W.K, T. (2014). Determinants of Net Savings Deposits held in Savings and Credit Cooperatives (SACCOs) in Uganda. *Journal of Economics and International Finance, 6*(4), 69–79. <https://doi.org/10.5897/jEIF2013.0563>
- MSC. (2019). *msc. 1–4.*
- Mwangi, W. P., & Cheluget, J. (2018). Role of Financial Literacy , Financial Innovation , Financial Inclusion on SME Access to Credit in Kenya : A Case of Kumisa SACCO  
Wambugu Peter Mwangi & Dr . John Cheluget ( PhD ) Role of Financial Literacy ,

- Financial Innovation , Financial Inclusion on. *Journal of Financial and Account*, 2(2), 1–18.
- Njehia, S. (2014). *Effect of Financial Literacy on Personal Financial Management of Employees of Mumias Sugar Company Limited University of Nairobi Declaration*.
- Normawati, R. A., Rahayu, S. M., & Worokinasih, S. (2021). *Financial Knowledge , Digital Financial Knowledge , Financial Attitude , Financial Behaviour and Financial Satisfaction on Millennials*. <https://doi.org/10.4108/eai.6-3-2021.2305967>
- Nunnally. (1978). Psychometric Methods. *Journal of the American Statistical Association*, 51(274), 413. <https://doi.org/10.2307/2281384>
- Nuwagaba, A. (2012). Savings and Credit Cooperative Societies (SACCOS) As a Source Of Financing Agriculture. Challenges and Lessons Learnt. *Journal of Environment and Earth Science*, 2(11), 109–114. [www.iiste.org](http://www.iiste.org)
- OECD. (2018). *G20/OECD INFE Policy Guidance on Digitalisation and Financial Literacy*. 1–25. <http://www.oecd.org/finance/G20-OECD-INFE-Policy-Guidance-Digitalisation-Financial-Literacy-2018.pdf>
- Ozili, P. K. (2010). *Munich Personal RePEc Archive Theories of urban externalities THEORIES OF URBAN*. 24614.
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>
- Ozili, P. K. (2020). *Munich Personal RePEc Archive Financial inclusion research around the world: a review Ozili, Peterson K Financial inclusion research around the world: a review*. 101809.
- PACFL. (2008). President ’ s Advisory Council on Financial Literacy. *Annual Report to the President*. Washington: The Department of the Treasury.

www.ustreas.gov/offices/domesticfinance/%5Cnfinancialinstitution/fin-  
education/council/exec\_sum.pdf

- Pant Joshi, D. (2011). Financial Inclusion & Financial Literacy. *BI OECD SEMINAR – Roundtable on the Updates on Financial Education and Inclusion Programmes in India*, 1–11.
- Prasad. (2018). *Digital Financial Literacy : A Study of Households of Udaipur*. V(I), 23–32.
- Prasad, P. H. (2017). *Digital Financial Literacy : A Study of Households of Udaipur*. 5, 201–209.
- Rachel Kuruvilla, R., & N Harikumar, P. (2020). A study on the financial awareness among women entrepreneurs in Kottayam district. *Journal of Management Research and Analysis*, 5(3), 331–335. <https://doi.org/10.18231/2394-2770.2018.0052>
- Rai, K., Dua, S., & Yadav, M. (2019). Association of Financial Attitude, Financial Behaviour and Financial Knowledge Towards Financial Literacy: A Structural Equation Modeling Approach. *FIIB Business Review*, 8(1), 51–60. <https://doi.org/10.1177/2319714519826651>
- Report, A. general's. (2014). *Value For Money Audit Report on the Management of Loan Portfolio by the Microfinance Support Centre*.
- Saini, S. (2019). *Digital Financial Literacy: Awareness and Access*. 9(4), 201–207.
- Sajuyigbe, D. A. S., Odetayo, T. A., & Adeyemi, A. Z. (2020). Financial Literacy and Financial Inclusion as Tools to Enhance Small Scale Businesses' Performance in Southwest, Nigeria. *Finance & Economics Review*, 2(3), 1–13. <https://doi.org/10.38157/finance-economics-review.v2i3.164>
- Selvia, G., Rahmayanti, D., Afandy, C., & Zoraya, I. (2021). *The Effect of Financial Knowledge, Financial Behavior and Financial Inclusion on Financial Well-being*. <https://doi.org/10.4108/eai.3-10-2020.2306600>

- Setiawan, M., Effendi, N., Santoso, T., Dewi, V. I., & Sapulette, M. S. (2020). Digital financial literacy, current behavior of saving and spending and its future foresight. *Economics of Innovation and New Technology*, 0(0), 1–19.  
<https://doi.org/10.1080/10438599.2020.1799142>
- Shabna. (2014). Awareness and Access of Financial Inclusion Drive a Study of Below Poverty Line Households in Kerala. *Global Journal of Commerce & Management*, 3(4), 201–204.
- Shapoval, Y., Shkliar, A., Shpanel-Yukhta, O., & Gruber, K. (2021). The level of financial inclusion in Ukraine: Measuring access, quality, and usage of financial products and services. *Banks and Bank Systems*, 16(2), 59–67.  
[https://doi.org/10.21511/bbs.16\(2\).2021.06](https://doi.org/10.21511/bbs.16(2).2021.06)
- Shen, Y., Hu, W., & Hueng, C. J. (2018). The effects of financial literacy, digital financial product usage and internet usage on financial inclusion in China. *MATEC Web of Conferences*, 228. <https://doi.org/10.1051/mateconf/201822805012>
- Singh Kultar. (2007). *No Title*.
- Smith, T., & Smith, S. (2018). *Reliability and Validity of the Research Methods Skills Assessment*. 30(1), 80–90.
- Stella, G. (2019). Digital Finance and Its Impact on. *Researchgate.Net*, 6(1), 122–127.
- Świecka, B. (2019). 1. A theoretical framework for financial literacy and financial education. *Financial Literacy and Financial Education*, October, 1–12.  
<https://doi.org/10.1515/9783110636956-001>
- Taherdoost, H. (2016). Validity and Reliability of the Research Instrument ; How to Test the Validation of a Questionnaire / Survey in a Research Hamed Taherdoost To cite this version : HAL Id : hal-02546799 Validity and Reliability of the Research Instrument ; How

- to Test the. *International Journal of Academic Research in Management*, 5(3), 28–36.  
<https://hal.archives-ouvertes.fr/hal-02546799/document>
- Tony, N., & Desai, K. (2020). Impact of digital financial literacy on digital financial inclusion. *International Journal of Scientific and Technology Research*, 9(1), 1911–1915.
- Trial, R. C., & Change, M. S. (2017).
- UBOS. (2020). The Uganda national household survey. *Uganda Bureau of Statistics*, 76.  
[https://www.ubos.org/wp-content/uploads/publications/09\\_2021Uganda-National-Survey-Report-2019-2020.pdf](https://www.ubos.org/wp-content/uploads/publications/09_2021Uganda-National-Survey-Report-2019-2020.pdf)
- Wakyiku, D., & Adong, P. (2019). *Digitization of SACCOS in Uganda- drivers and impact study*. 1–29. [https://www.mercycorps.org/sites/default/files/Digitization of SACCOs in Uganda - Drivers and Impact Study.pdf](https://www.mercycorps.org/sites/default/files/Digitization%20of%20SACCOs%20in%20Uganda%20-%20Drivers%20and%20Impact%20Study.pdf)
- Wang, X., & Cheng, Z. (2020). Cross-Sectional Studies: Strengths, Weaknesses, and Recommendations. *Chest*, 158(1), S65–S71. <https://doi.org/10.1016/j.chest.2020.03.012>
- Wong, A., & Yamat, H. (2020). Testing the Validity and Reliability of the “Learn, Pick, Flip, Check, Reward” (LPFCR) Card Game in Homophone Comprehension. *International Journal of Academic Research in Business and Social Sciences*, 10(1), 22–32.  
<https://doi.org/10.6007/ijarbss/v10-i1/6803>
- Workplan, L. G. A. (2020). *Vote : 551 Sembabule District Foreword Vote : 551 Sembabule District*. 1–138.
- World Bank. (2021). *The Drive for Financial Inclusion : Lessons of World Bank Group Experience*. 1–34.
- Yoopetch, C., & Chaithanapat, P. (2021). *Kasetsart Journal of Social Sciences The effect of financial attitude , financial behavior and subjective norm on stock investment intention*. 42,

501–508.

Zainul Arifin, A. (2018). *Influence of financial attitude, financial behavior, financial capability on financial satisfaction.*



## APPENDIX I

### QUESTIONNAIRE

#### Questionnaire to members of the Savings and Credit cooperative Organisation (SACCO's)

Dear Respondent;

This study seeks to investigate digital financial literacy and financial inclusion among SACCO members in Ugandan. I humbly request that you contribute your knowledge and experience to our study. The data provided will be kept completely confidential and used purely for research purposes. This study is carried out under the supervision of School of Management and Entrepreneurship, Kyambogo University. If you require any additional information or wish to obtain the study's findings, please contact us at the following location and/or our contacts.

We thank you in advance for accepting to work with us.

#### *Contact person;*

*James Muliisa Tel. 0759023493/0773767394*

*Email. Mullisajames1@gmail.com*

#### SECTION A; BIO DATA

##### A. Respondent Bio-data

1. Sex (tick appropriately):

Male  Female

2. Age (tick appropriately):

a) Less than 25 years  b) 25-29 years  c) 30-34 years  d) 35-39 years   
e) 40-44 years  f) 45-49 years  g) 50 and above

3. Highest Education attainment (tick appropriately):

- a) O Level       b) A Level       c) Certificate       d) Diploma   
 e) Degree       f) Others specify.....

4. What is name of your financial institution?

.....

5. Number of Years as a member of the Financial institution (tick appropriately):

- a) Less than 5 years       b) 5-9 years       c) 10-14 years   
 d) 15-19years       e) 20-24 years       f) Above 25 years

6. Do you own a mobile phone?

- a) Yes       b) No

7. How often do you save on your mobile money account?

- a) Regularly       b) Sometimes       c) Rarely       d) Never

8. How often do you pay for bills using mobile money?

- a) Regularly       b) Sometimes       c) Rarely       d) Never

### SECTION B: DIGITAL FINANCIAL LITERACY

For this section, Tick appropriately the degree to which you agree or disagree with the statements using a scale provided below.

Strongly disagree	Disagree	Not Sure	Agree	Strongly agree
1	2	3	4	5

## B. Digital Financial Knowledge

Tick appropriately the degree to which you agree or disagree with the statements below. Use the scale of; SD-Strongly Disagree, D -Disagree, NS -Not Sure, A -Agree and SA -Strongly Agree.

CODE	Evaluate your knowledge on the following	1	2	3	4	5
		<i>SD</i>	<i>D</i>	<i>NS</i>	<i>A</i>	<i>SA</i>
DK1	I am knowledgeable about how internet banking can ease my access to a number of banking services					
DK2	I am knowledgeable about the existence of money transfers via mobile money					
DK3	I am aware that use of mobile banking can ease access to a number of banking services					
DK4	I am aware of the loan services I can get via mobile money					
DK5	I am aware of all the money saving services available to me via mobile					
DK6	I am informed of the security risks associated with using mobile banking such as hackers					
DK7	I am aware that changing my mobile money password can minimize security risks					
DK8	I am aware that I can use mobile money to make payments.					

**c. Digital financial skill**

<b>CODE</b>	<b>Statement</b>	<b>1 SD</b>	<b>2 D</b>	<b>3 NS</b>	<b>4 A</b>	<b>5 SA</b>
DS1	I am without any difficulty accessing online banking services					
DS2	I am able to make money transfers via mobile money					
DS3	I can ably use mobile banking to access financial services from my financial institution					
DS4	I can ably apply for a loan from my financial institution through a mobile phone					
DS5	I am without any difficulty saving money via mobile money					
DS6	I am always able to change my mobile money password					
DS7	I am proficient at using my phone to check my bank account balance					

**d) Digital financial attitude**

Tick appropriately to indicate how much you agree or disagree with the statements below.

<b>CODE</b>	<b>Statement</b>	<i>1</i> <i>SD</i>	<i>2</i> <i>D</i>	<i>3</i> <i>NS</i>	<i>4</i> <i>A</i>	<i>5</i> <i>SA</i>
DA1.	I find it easy to use agency banking to access my bank services					
DA2.	I find it easy to acquire a loan via mobile money					
DA3.	I comfortably check for my account balance using a mobile phone					
DA4.	I confidently save on mobile money					
DA5.	I find it easy to deposit money on my account using mobile banking					
DA6.	I can confidently make payments using mobile money					
DA7.	I am often prepared to deal with any security risks associated with mobile banking					
DA8.	I am willing to receive financial updates from my financial institution via a mobile phone					

## SECTION C: FINANCIAL INCLUSION

For this section, Tick appropriately the degree to which you agree or disagree with the statements using a scale provided below.

<b>Strongly disagree</b>	<b>Disagree</b>	<b>Not Sure</b>	<b>Agree</b>	<b>Strongly agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

<b>CODE</b>	<b>Statement</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
F1.	I can easily access loans from the financial institutions at anytime	1	2	3	4	5
F2.	My savings with the financial institution has grown over the years	1	2	3	4	5
F3.	The cost of borrowing from financial institutions is affordable today	1	2	3	4	5
F4.	I often use mobile banking to deposit money on my account	1	2	3	4	5
F5.	I often check my account balance using mobile banking.	1	2	3	4	5
F6.	I often pay for bills using mobile money	1	2	3	4	5
F7.	I frequently make transfers from mobile money to my account.	1	2	3	4	5

## APPENDIX II

### INTERVIEW GUIDE

**Dear respondent,**

This is an academic study investigating the effects of digital financial literacy on financial inclusion of SACCO members in Uganda. The study is conducted by school of management and entrepreneurship, Kyambogo University. As a result, you are kindly invited to take some time and share your responses.

**An interview guide schedule for the interviews with SACCOs to obtain information about how digital financial literacy influences financial inclusion**

1. How many customers do you work on a daily basis?
2. How many customer accounts have you opened since commencement?
3. Has the savings with the financial institution grown over the years?
4. Does your enterprise have the required expertise and skills to use mobile banking?
5. In your own opinion, do you think mobile banking can ease access to a number of banking services?

