ROLE OF FINANCIAL LITERACY ON HOUSEHOLD INCOME GENERATION AMONG SACCO MEMBERS IN NAROK COUNTY, KENYA

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DECLARATION

This research project is my original work and has not been presented to Maasai Mara University or to any other University for a degree or any other award.

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DEDICATION

This work is dedicated to my mum, Winfred Mueni, my aunt, Pauline Mwaniah, My brother Peter Kiswili and my friend Jackline Naeku, for their continuous support, encouragement and prayers during the research process. May the Almighty God Bless you.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

COVID-19: Coronavirus Disease 2019

Fintech: Financial Technology

FSD: Financial Sector Deeping

GDP: Gross Domestic Product

INFE: International Network on Financial Education

NACOSTI: National Commission for Science, Technology and Innovation

OECD: Organization for Economic Cooperation and Development

SACCO: Saving and Credit Cooperative Society Organization

SPSS: Statistical Packages for Social Scientists

TAM: Technology Acceptance Model

OPERATIONAL DEFINITION OF TERMS

Financial literacy: Financial literacy is the ability to understand and effectively use various financial skills, including personal financial management, budgeting, and investing.

Fintech Literacy: Financial technology literacy has been defined as the ability to use new technology to improve and automate the delivery and use of financial services.

Household Income: Encompasses money received by all household members from various sources such as salaries and wages, dividends.

Investment Literacy: Investment literacy has been defined as tips enabling someone to screen out the best investment opportunities from several choices to maximize investment returns.

Saving Literacy: Saving literacy has been defined as tips that enable you to spend less of your income.

ABSTRACT

An increase in formal financial access has been argued to be one of the fundamental factors to increasing a household's capability to generate income, which is vital for the economic growth of a nation. However, despite a significant rise in formal financial access from 75.5% in 2019 to 83.7% in 2022 in Kenya, household income generation has not improved as anticipated, as over 50% of Kenyans compared to a proportion of only 25-40% in other developing countries, still grapple with extreme poverty, falling below the international poverty line of $1.90 a day as per a 2022 World Bank report. This indicates that the issue at stake may not be financial access only. As a result, researchers needed to examine other issues that might cause this adverse trend in household income generation. To shed light on such issues, the study sought to examine the role of financial literacy on household income generation among SACCO members in Narok County, Kenya. The specific objectives were to determine saving literacy, investment literacy, financial technology literacy, and risk literacy on household income generation among SACCO members in Narok County, Kenya. The study was anchored on the lifecycle theory, behavioral finance theory, technology acceptance model, and capital asset pricing model. Employing a descriptive research design, the study targeted 3,050 registered SACCO members, from which a sample of 217 respondents was selected using stratified and purposive sampling. The study data was collected using a self-administered structured questionnaire and analyzed through descriptive statistics (percentages and means) and inferential statistics (regression and correlation) with the help of SPSS version 27. The simple linear regression model was adopted for the study. The findings revealed that saving literacy ($\beta = 0.46$, $p < 0.05$), investment literacy ($\beta = 0.225$, $p < 0.05$), financial technology literacy ($\beta = 0.386$, $p < 0.05$), and risk literacy ($\beta = 0.090$, $p < 0.05$), had a significant positive role on household income generation. Thus, the study concludes that financial literacy is crucial for increasing household income among SACCO members. By providing individuals with the necessary knowledge and skills, financial literacy enables them to make informed decisions, effectively manage their finances, and pursue opportunities to generate income. The study, therefore, recommends that the government prioritize improving household savings, investments literacy, financial technology literacy, and risk literacy of its households, while also working on improving financial access. This can be achieved through collaborations with SACCOs, financial institutions, and academic entities. Future research could explore the impact of financial behavior and knowledge on income generation across diverse demographics and sectors, including cross-country comparisons, longitudinal studies, qualitative methods, policy evaluations, digital literacy investigations, and industry-specific analyses.

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter presents the background of the study, statement of the problem, research objectives and hypotheses, significance of the study and scope of the study, and the study limitations.

1.2 Background of the Study

The contribution of household income to a nation's economic growth carries paramount significance (Kihombo, Ahmed, Chen, Adebayo, & Kirikkaleli, 2021). The augmentation of household income not only elevates discretionary income within households but also translates into improved living standards and reduced poverty rates (Wiesel & Stone, 2023). Against the backdrop of the far-reaching financial and economic ramifications of the COVID-19 crisis, governments worldwide embarked on endeavors to bolster household income generation as a countermeasure (Choi, 2020). One strategy, as outlined by Koomson, Annan, and Danquah (2020), involved enhancing households' formal financial access, with the expectation that this expansion would substantially bolster household income creation. However, despite substantial global efforts in this regard, the impact has been less pronounced than anticipated, as noted by Ankrah (2020).

In Kenya, there has been a remarkable surge in access to formal financial services and products, with the percentage rising from 75.5 percent in 2019 to a noteworthy 83.7 percent in 2022 (FSD, 2022). However, rather alarmingly, research on Kenya's economic update paints a concerning picture. Despite this substantial expansion in formal financial access,

household income generation has not witnessed the anticipated improvement (FSD, 2022). Surprisingly, over 50% of Kenyan citizens, in stark contrast to a proportion of only 25-40% in other developing nations, still grapple with the harsh realities of extreme poverty, placing them below the international poverty line of $1.90 a day (World Bank, 2022). This alarming scenario has prompted a comprehensive examination of the contributing factors, aiming to provide valuable insights for the Kenyan government as it strives to devise more effective strategies to realize the desired outcomes of expanded formal financial access (Wyk,2021).

While various factors such as the soaring cost of living, economic recession stemming from the challenges posed by COVID-19, and inadequate infrastructure might have contributed to the observed inadequacies in household income generation, one fundamental factor that demands considerable attention is the financial literacy of households (Koomson,2020). This becomes particularly pertinent in light of the rapid proliferation of financial technology and the increasing complexity of financial markets (Feyen, Natarajan, & Saal,2023). As financial products and services become more accessible, households may find themselves grappling with the challenges of making sound financial decisions (Koomson, 2020; Huang, 2020; Wyk, 2021; Boone, 2020).

Financial literacy, as defined by Goyal and Kumar (2021), encompasses the comprehension and application of various financial skills, including financial planning, saving, investing, and financial technology utilization. In developed nations, research has underscored the pivotal role of financial literacy in household income generation. For instance, Hasan and Hogue (2021) found that financial literacy influences individuals' choices of financial products, with financially literate individuals more inclined to seek and employ relevant

information and make informed financial decisions. Additionally, financially literate individuals are more likely to solicit advice from financial advisors when faced with complex financial choices (Wang & Zhang, 2020) and exhibit a greater propensity to acquire financial assets like stocks and bank loans (Lyons & Kass, 2021), accumulating sufficient wealth for retirement (Sarpong, 2021).

Conversely, financial illiteracy carries substantial costs. As per Choi (2020), financially illiterate individuals incur significant financial losses and accumulate more outstanding debts. Moreover, they are susceptible to exploitation by unscrupulous financial service providers (Jordan et al., 2020; Liu et al., 2020) and tend to refrain from seeking investment guidance, leading to investment mistakes and debt repayment challenges (Kurowski, 2021; Iyke, 2020). Consequently, financial literacy plays a pivotal role in household income generation within many developed nations.

Furthermore, studies in developed nations have demonstrated that specific financial literacy variables, such as saving, investment, financial technology utilization, and risk literacy, exert a profound influence on household income generation (Huang, 2020; Lusardi & Mitchel, 2017; Fitrah, 2022; Wyk, 2021; Boone, 2020). In light of the burgeoning financial technology landscape and the increasing complexity of financial markets, financial experts must now emphasize the preparedness of households to make sound financial decisions, as these decisions significantly impact household income generation (Liu & Tufano, 2020; Lusardi & Mitchel, 2017). A more comprehensive comprehension of the role played by financial literacy in household income generation holds paramount importance, particularly in developing nations like Kenya, especially as the government

endeavors to steer economic recovery following the severe blow dealt by the COVID-19 financial and economic crisis.

1.2.1 Financial Literacy

Financial literacy, which encompasses the knowledge and skills necessary to manage personal finances effectively, plays a crucial role in enhancing household income generation worldwide. This concept includes understanding key financial areas such as saving, investment, financial technology (fintech), and risk management. Research indicates that higher financial literacy levels significantly influence economic outcomes for individuals and households. For instance, a study by Lusardi and Mitchell (2016) in the United States demonstrated that individuals with a higher level of financial literacy tend to amass more wealth, largely due to their ability to make informed financial decisions and avoid costly mistakes. Similarly, in China, Li and Svejnar (2017) found that individuals with greater financial literacy enjoyed better incomes and were more likely to pursue self-employment, highlighting the role of financial education in fostering entrepreneurial activities. In Pakistan, Zia (2018) reported that those with greater financial literacy were more likely to participate in the formal financial sector, which in turn facilitated better income stability and growth. Furthermore, Agarwal and Tuft (2016) in India found a significant positive correlation between financial literacy and household income, underscoring the importance of financial knowledge in personal wealth accumulation.

However, not all global studies agree on the impact of financial literacy on household income. Some research suggests that the relationship may be more complex and context-dependent. For example, a study conducted in Japan by Sekita, Watanabe, and Nakamoto (2022) found that financial literacy did not significantly affect household income creation.

This finding suggests that cultural and economic factors may play a role in mediating the benefits of financial literacy. Similarly, Luhrmann and Serra (2021) analyzed data from a large-scale survey in Germany and found no significant correlation between financial literacy and investment behavior, even after controlling for socioeconomic factors. This lack of correlation challenges the assumption that financial literacy universally leads to better financial outcomes. Additionally, Armand and Trinh (2020) analyzed data from Vietnam and concluded that there was no significant link between financial literacy and household income generation. These conflicting results highlight the necessity for more nuanced research that takes into account regional differences and contextual variables.

In Africa, the impact of financial literacy on household income generation has also been subject to varied findings. Some studies support the positive impact of financial literacy, while others present a more ambiguous picture. Ojo, Adebisi, and Iyoha (2018) in Nigeria found that financial literacy was significantly related to income generation, particularly among self-employed individuals. Similarly, Gershon, Kwame, and Selorm (2019) in Ghana reported that financial literacy was positively associated with income for both self-employed and salaried workers. In South Africa, Nkosana and Masocha (2019) demonstrated a significant positive correlation between financial literacy and income for workers in both the informal and formal sectors. Conversely, Antonio and Silva (2020) in Mozambique found no significant correlation between financial literacy and income, suggesting that the effectiveness of financial education programs may vary depending on the local economic context. Ngaruko and Ntiranyuhura (2021) in Rwanda also reported no significant positive correlation between financial literacy and income, adding to the mixed evidence from the region.

In Kenya, the relationship between financial literacy and household income generation has been explored with similarly varied results. Mwaniki (2018) found that risk literacy positively influenced the growth of small and medium enterprises (SMEs) in Nyeri County, indicating that understanding financial risks can lead to better business outcomes. Fatoki (2014) highlighted that a lack of financial education adversely affects SMEs, particularly new start-ups, emphasizing the need for comprehensive financial literacy programs.

Motompa (2016) examined factors affecting the growth of Savings and Credit Cooperative Societies (SACCOs) in Kenya, emphasizing the importance of member participation and financial education for SACCO success. Ombago (2015), Dave (2017), and Schutzeichel (2019) argued that investment literacy significantly influences financial management practices, suggesting that better financial knowledge can lead to improved financial decisions. Mwatondo and Wekesa (2020) indicated that financial knowledge, attitudes, behaviors, and training significantly influence the financial growth of SACCOs. However, Mayiah (2016) disagreed, pointing out that financial literacy alone may not be sufficient without the appropriate financial infrastructure and support systems in place.

Despite the mixed evidence, the majority of studies suggest that financial literacy can play a vital role in enhancing household income generation. The inconsistencies in findings, particularly between developed and developing countries, underscore the importance of context-specific research. In many developing countries, including Kenya, financial literacy rates are generally lower compared to developed nations (Lusardi & Mitchell, 2019). This gap highlights the need for localized studies that take into account the unique economic and cultural contexts of these regions. The current study on the role of financial literacy in household income generation among SACCO members in Narok County,

Kenya, aims to address this gap by focusing on key components of financial literacy, such as saving, investment, fintech, and risk literacy. This research is particularly relevant as the Kenyan government seeks measures to increase household income generation and boost economic recovery following the severe financial and economic impacts of the COVID-19 pandemic.

1.2.2 Household Income generation

Household income generation, is a multifaceted process influenced by various socio-economic and environmental factors. In Narok County, predominantly an agricultural region, the majority of households rely on farming as their primary source of income. However, the effectiveness of agricultural activities in generating substantial income is often hampered by issues such as erratic weather patterns, limited access to modern farming technologies, and fluctuating market prices for agricultural products (Kariuki & Njeru, 2022). Diversification of income sources, therefore, becomes crucial. Households that engage in multiple economic activities, such as combining crop farming with livestock rearing or small-scale trading, tend to have more stable and higher incomes.

Furthermore, the role of women's participation in economic activities cannot be overlooked. In many households, women engage in small-scale businesses or craft production, significantly contributing to the overall household income (Muthoni & Waweru, 2023). Access to microfinance and SACCOs also plays a vital role in enabling these households to invest in income-generating activities, providing much-needed capital for expansion and diversification (Kimani & Mutua, 2022).

The effectiveness of household income generation is further enhanced by the strategic use of remittances. Many households in Narok County receive financial support from family members working in urban areas or abroad. These remittances are often used to supplement household incomes, invest in farming inputs, or start small businesses, thereby creating a multiplier effect on local economies (Ndegwa & Kibe, 2023). Additionally, education is a significant factor influencing income generation. Households with members who have higher levels of education often have better access to information and resources that can improve productivity and income levels. This is particularly evident in the adoption of innovative farming techniques and participation in more lucrative non-farm employment opportunities. Training programs and workshops provided by NGOs and government agencies have been instrumental in equipping residents with the skills necessary to enhance their economic activities (Mwangi & Ngugi, 2023).

Moreover, community-based organizations, including SACCOs, play an essential role in fostering collective economic growth. By pooling resources and knowledge, these organizations enable members to undertake larger and more profitable ventures than they could individually. For example, collective investments in modern agricultural equipment or cooperative marketing strategies can lead to higher yields and better market prices for produce (Wanjiku & Kariuki, 2022). Additionally, these organizations often provide essential training and capacity-building initiatives that further enhance the economic capabilities of their members. The impact of these initiatives is significant, leading to improved livelihoods and economic resilience within the community. Furthermore, social capital within these groups fosters a support network that can provide both financial and

moral support during times of economic hardship, thereby stabilizing household incomes even during adverse conditions (Njiru & Waweru, 2023).

1.2.3 Saving Credit and Cooperative Societies in Kenya (SACCOs)

Savings and Credit Cooperative Societies (SACCOs) play a vital role in Kenya's financial landscape, providing essential financial services to a diverse range of members across the country (Odhiambo, 2019). SACCOs, as cooperative financial institutions, are owned and governed by their members, serving several key functions, such as promoting savings, offering affordable credit, and providing various financial services to their members (Odhiambo, 2019).

The primary objective of SACCOs is to foster savings and facilitate access to credit for their members (Kenani, & Bett, 2018). Members consistently pool their savings, creating a pool of funds that can be used to grant loans for various purposes. This system of mutual support and financial cooperation is instrumental in assisting individuals and communities in achieving their financial objectives and enhancing their overall economic well-being (Kenani, & Bett, 2018). Furthermore, SACCOs play a pivotal role in mobilizing financial resources for a wide range of development initiatives, spanning from small-scale entrepreneurial ventures to community-driven infrastructure projects.

In Kenya, SACCOs are governed by the Co-operative Societies Act of 2008. Although they are not directly overseen by the central bank, recent regulatory reforms have introduced a more structured oversight framework through the Sacco Societies Regulatory Authority (SASRA) (Kenani, & Bett, 2018). Specifically, SACCOs offering front office services, including accepting deposits, are now mandated to obtain licenses and operate under the

supervision and regulation of SASRA. This regulatory framework is designed to enhance the stability and security of SACCO operations, ultimately safeguarding the interests of members and the broader financial system.

The structure of SACCOs in Kenya varies widely, depending on their location and the composition of their membership. In urban areas, many SACCOs are formed by salary and wage earners who share a common bond, often facilitated by their employers through a check-off system (Ntoiti, & Jagongo,2021). This mechanism allows for automatic deductions from members' monthly salaries for savings and loan repayments. In contrast, SACCOs in rural areas typically have a community-based structure and are deeply involved in agricultural activities, reflecting the predominant economic pursuits in those regions. Beyond their core functions of savings and credit provision, SACCOs have diversified their services to include a broader array of financial offerings. These encompass insurance products, investment opportunities, and financial education programs, all aimed at enhancing the financial literacy and well-being of their members. SACCOs in Kenya adhere to cooperative principles, including democratic control, member economic participation, and a commitment to community welfare (Ntoiti, & Jagongo, 2021). These principles serve as the guiding framework for the governance and operations of SACCOs, ensuring that they remain focused on the needs of their members and the betterment of the communities they serve.

SACCOs continue to play a vital role in Kenya's financial sector. The sector has experienced steady growth in assets and membership. The total assets of SACCOs in Kenya stood at approximately 1.2 trillion Kenyan shillings, reflecting the increasing financial mobilization and investment capacity of these cooperatives. Additionally,

SACCOs serve millions of Kenyan members, contributing significantly to financial inclusion and economic development (Limonya, Byaruhanga, & Musiega,2023). These figures underscore the enduring importance of SACCOs in Kenya's financial landscape and their positive impact on the country's economic growth and development.

1.3 Statement of the Problem

An increase in formal financial access has been argued to be one of the fundamental factors to increasing a household's capability to generate income, which is vital for the economic growth of a nation (Kihombo et al.,2021). However, despite a significant rise in formal financial access from 75.5% in 2019 to 83.7% in 2022 in Kenya, household income generation has not improved as anticipated, as over 50% of Kenyans compared to a proportion of only 25-40% in other developing countries, still grapple with extreme poverty, falling below the international poverty line of $1.90 a day, (World Bank, 2022; FSD,2022). This suggests that other factors such as high cost of living, high rates of unemployment, poor climatic conditions and the post effects of the COVID-19 economic crisis, may be contributing to low levels of household income generation in Kenya. Due to the rapid growth in financial technology coupled with the sophistication of the financial markets, one such vital factor could have been households' financial decisions when utilizing accessed financial products and services (Huang,2020; Wyk,2021; Boone,2020). Researchers in Kenya and other developing countries where the problem of low level of household income generation is predominant endeavor to investigate how well-equipped households were to make financial decisions relating to savings, investments, fintech, and risk literacy, which could influence how well or poorly they used the accessed funds. Prior studies have produced contrasting results besides not establishing a clear direction on the

role of financial literacy on household income generation, with most concentrating on the role of financial literacy on financial management (Kim,2022, Ombago, 2015; Dave, 2017; Schutzeichel, 2019; Mwaniki, 2018; Mwatondo & Wekesa's,2020). To fill this gap, this study specifically focused on the effect financial literacy on household income generation among SACCO members in Narok County and in addition adopted the most recent data.

1.4 Objectives of the Study

The following general and specific objectives guided the study.

1.4.1 General Objective

The study intended to determine the role of financial literacy on household income generation among SACCO members' in Narok County, Kenya.

1.4.2 Specific Objectives

The study looked at the following specific objectives.

i. To identify the role of saving literacy on household income generation among SACCO members in Narok County, Kenya.
ii. To establish the role of investment literacy on household income generation among SACCO members in Narok County, Kenya.
iii. To examine the role of financial technology literacy on household income generation among SACCO members in Narok County, Kenya.
iv. To assess the role of risk literacy on household income generation among SACCO members in Narok County, Kenya.

1.5 Research Hypotheses

The study sought to test the following null hypotheses:

H_{01}: Saving literacy has no significant role in household income generation among SACCO members in Narok County, Kenya.

H_{02}: Investment literacy had no significant role in household income generation among SACCO members in Narok County, Kenya.

H_{03}: Financial technology literacy had no significant role in household income generation among SACCO members in Narok County, Kenya.

H_{04}: Risk literacy had no significant role in household income generation among SACCO members in Narok County, Kenya.

1.6 Significance of the Study

This research's findings and recommendations were of tremendous use to curriculum developers. Curriculum developers could implement a better-structured curriculum covering all essential aspects of financial literacy and improved financial literacy delivery methods to ensure that all course objectives are met by the end of any student's course. Again, they could raise awareness of the significance of financial literacy in all financial decisions nationwide. This could enhance the effectiveness of saving, investing, and Risk literacy decisions while contributing to long-term household income generation, economic growth, and financial market stability.

In addition, by utilizing the findings of this study, policymakers could establish more effective and efficient policies addressing the current financial issues that have been impeding the country's economic growth and development. Moreover, the study's findings could aid the Kenyan government and other governments in developing nations in

empowering their low-income citizens by increasing their access to formal financial services and training them in the necessary financial skills to maximize their use of the funds. This would ensure that any funds available to residents are invested profitably, enhancing household income generation and, ultimately, the nation's economic prosperity.

Further, the study's findings would contribute to advancing financial knowledge in Kenya and provide a foundation for future research on other facets of financial literacy and household income.

1.7 Scope of the Study

The scope of this study encompassed examining the influence of financial literacy on household income generation specifically among SACCO members. The research targeted all categories of SACCO members within Narok County. Narok County was chosen as the study location due to its status as one of Kenya's rapidly developing counties and its metropolitan nature. This choice was made to ensure that the findings of the study would be more representative and reliable, given the diverse economic activities and demographic characteristics of the county, thus enhancing the validity and generalizability of the research outcomes.

1.8 Limitations and Delimitations of the Study

The study faced certain limitations that warrant acknowledgment. Firstly, non-cooperation from two of the SACCOS during data collection potentially affected the intended number of respondents, similar to issues faced by prior researchers (Mwaniki, 2018; Mayiah, 2016). To address this, the researcher, in consultation with supervisors, gathered additional data from fully cooperative SACCOS to maintain the study's scope and validity. Secondly,

some respondents were concerned about the sensitivity of the data, as noted in similar studies (Schutzeichel, 2019; Mwatondo & Wekesa, 2020). The researcher mitigated this by emphasizing strict confidentiality measures, fostering greater cooperation from these respondents.

Lastly, language barriers emerged as a notable obstacle, particularly with elderly and illiterate respondents. To surmount this challenge, the researcher sought assistance from SACCO officials who acted as proficient interpreters. Their support in explaining the questionnaire's statements to these participants facilitated a smoother and more effective data-collection process. Despite these limitations, the study maintained a well-designed methodology and data collection approach to uphold the credibility and reliability of the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the pertinent literature that guided the research. It includes a theoretical framework, a conceptual review, an empirical review, a summary of the literature reviewed, and research gaps.

2.2 Theoretical Review

This study's theoretical review was based on the lifecycle saving theory, behavioral finance theory, the technology acceptance model, and the capital asset pricing model.

2.2.1 Life-Cycle Hypothesis

The theory was proposed by Franco Modigliani and Richard Blumberg in 1954. According to the theory, households seek to smooth their consumption over their lifetime by borrowing during their younger years when they have a lower income and higher expected future income and saving when they have a higher income and lower expected future income.

Several recent studies have shown support for the arguments of this theory. For instance, a study by Dao (2021) on lifecycle saving behavior and housing wealth used data from the survey of consumer finances and found that the relationship between age and saving was consistent with the predictions of the lifecycle model. Another study by Fang and Su (2020) on the heterogeneity of the lifecycle saving pattern in China that analyzed the lifecycle saving pattern in China found evidence supporting the lifecycle model of saving. Lusardi and Tufano (2015), in their study," debt literacy, financial experiences, and over-

indebtedness," found that households who were more financially literate were more likely to follow the predictions of the lifecycle model of saving, suggesting that the theory may be more applicable to households with higher levels of financial literacy. However, there are limitations of the lifecycle saving theory as well. The theory assumes that households have perfect information and can make perfect decisions, which is not always true (Smith,2023). Additionally, the theory assumes that households can borrow and lend at any point in their life, which may only be the case for some.

Some studies have shown support for this criticism. For instance, a study by Chen and Wei (2021) that looked at the role of individual heterogeneity in the lifecycle saving pattern using data from China found that individual heterogeneity has a significant role in the lifecycle saving pattern, suggesting that the lifecycle model may not fully capture the complexity of household saving behavior. Shao and Fan (2020), in another study that looked at the effect of housing prices on the lifecycle saving pattern in India, found that the relationship between housing prices and the lifecycle saving pattern is more complex than predicted by the lifecycle model, suggesting that the theory may not fully capture the role of housing prices on saving behavior. Also, Kim and Lee (2019) conducted a study on the role of financial literacy on the lifecycle saving pattern in the United States. The study found that financial literacy significantly influences the lifecycle saving pattern, suggesting that the lifecycle model may only partially capture the role of financial literacy in household saving behavior.

The life cycle savings theory was relevant to this study as it provided a valuable framework for understanding how households made decisions about saving and spending over their lifetimes and how these decisions were influenced by income, financial literacy, and

individual heterogeneity. Additionally, the theory highlighted the importance of understanding the relationship between income, savings, and spending, a crucial aspect of saving literacy.

2.2.2 Behavioral Finance Theory

In the 1970s, Amos and Daniel introduced the theory of behavioral finance, which posits those emotions, biases, and cognitive shortcuts (heuristics) influence household financial decision-making, leading to deviations from rationality. Recent research has substantially fortified the theory's standing. For instance, a study by Bhatia, et al., (2022) delved into the role of overconfidence in the equity premium puzzle, revealing that overconfident households, who overestimated their stock-picking prowess, allocated more investments to equities, resulting in elevated equity prices and reduced expected returns. Moreover, Barberis and Xiong (2019) developed a model accentuating the centrality of speculation and emotions in financial bubbles, underscoring how speculators' behavior influences asset prices. Additionally, Shah, et al., (2018) conducted an extensive survey on behavioral biases in financial markets, asserting that these biases, shaped by emotions, societal norms, and beliefs, could exert a significant impact on market outcomes and pricing.

Despite the growing body of evidence buttressing the theory, noteworthy limitations persist. A primary concern lies in the empirical testing of behavioral predictions, a formidable task owing to the challenge of directly observing and quantifying the psychological and emotional factors influencing financial decision-making. Furthermore, some critics argue that the theory ought to be more expansive and offer specific guidance on facilitating improved financial decision-making.

Numerous studies have scrutinized the theory of behavioral finance, with Thaler (2018) advising prudence in its application, acknowledging its valuable insights while suggesting it may not comprehensively elucidate financial markets independently. He emphasized the pivotal need to amalgamate both behavioral and conventional economic theories for a comprehensive comprehension. Similarly, Grossman and Stiglitz (2021) argued that conventional market microstructure theories could expound upon financial market inefficiencies without necessitating recourse to behavioral finance. Fama (2015) maintained that empirical evidence fortified the efficient market hypothesis, implying that behavioral finance might be considered optional for explaining financial market outcomes. Furthermore, Daniel and Houser (2015) discerned limited applicability of behavioral economics in environmental policy due to an insufficient grasp of the precise psychological factors influencing environmental decisions.

Despite these criticisms, the pertinence of behavioral finance to the study remains manifest. It imparts invaluable insights into the psychological underpinnings of financial decision-making. The comprehension of biases, emotions, and heuristics steering financial behavior can empower households to render more informed decisions and devise effective investment strategies. Furthermore, the theory underscores the significance of financial education, enabling households to discern the factors molding their financial choices.

2.2.3 Technology Acceptance Model (TAM)

In 1989, Davies introduced the Technology Acceptance Model (TAM), which proposes that when consumers encounter new technology, various factors come into play to

determine when and how they will adopt and utilize it (Bertrand & Bouchard, 2018). This model predicts that the behavior of mobile subscribers in using technology, such as M-Banking, hinges on their perception of the technology's value and ease of use, ultimately shaping their intention to utilize it.

Davis (1989) identified two primary determinants within TAM: Perceived usefulness, which reflects an individual's belief that using a particular system will enhance their performance, and perceived ease of use, which gauges an individual's perception of how effortless it is to operate an information system. Numerous meta-analyses have consistently affirmed the practicality, robustness, and reliability of the Technological Acceptance Model, making it the most widely employed model in the context of technological acceptance.

Furthermore, the Technology Acceptance Model incorporates external variables that elucidate the dynamics of perceived usability and usefulness (Marangunic & Granic, 2015). These components are linked to facilitating conditions, subjective norms, and self-efficacy, with extraneous variables varying among studies, shedding light on individual capabilities (Adams Nelson & Todd, 2016). Thus, perceived ease of use encompasses an individual's perception of the effort required to operate technology, and numerous adaptations of the TAM predict usage based on behavioral intention (Scherer, Siddiq, & Tondeur, 2015). This relationship's direction remains open-ended, as a positive user experience can influence future behavioral intentions (Straub, 2019). The theory posits that belief constructs, such as perceived ease of use (PEOU) and perceived usefulness (PU), entirely mediate the impact of external variables on IT usage behavior.

However, researchers have raised various critiques of the model. Bashange (2015) notes that much of the relevant literature treats the TAM as a dependent variable rather than a tool for identifying the driving elements of behavior. Zahid, Hussain, and Sadiq (2018) argue that the TAM overlooks age and education as external variables that could influence technology adoption and acceptance. Moreover, behavior can be influenced by hidden personality traits, and potential technology users may not solely base their decisions on utility and usability. Nevertheless, the model suggests that additional external factors contribute to technology acceptance.

This concept is pertinent to the investigation as it illustrates how new technology impacts household income generation by influencing technical decisions on how to effectively and efficiently utilize technology to maximize benefits. The study underscores that the level of Fintech literacy among household members can significantly affect the ease of optimizing the use of new technology.

2.2.4 The Capital Asset Pricing Model (CAPM)

In the early 1960s, William Sharpe and his colleagues introduced the Capital Asset Pricing Model (CAPM). Advocates of CAPM contend that it serves as a valuable tool for investors to evaluate the anticipated return on an asset or a portfolio of assets. According to this model, investors are depicted as rational and risk-averse individuals driven by the pursuit of wealth maximization. The core tenet of CAPM posits that the expected return on an asset equals the risk-free rate augmented by a risk premium. Calculating this risk premium entails multiplying the market risk premium by the asset's beta, a metric measuring the asset's responsiveness to market risk. The market risk premium signifies the excess return

that an investor anticipates when undertaking the risk of investing in the market rather than in a risk-free asset.

A body of research has lent support to the validity of CAPM. For instance, Afzal's (2019) revealed that, beta proved to be a substantial predictor of stock returns, affirming the utility of the CAPM model in estimating expected stock returns. Similarly, Mavridis (2020) found that beta retained its significance in predicting stock returns, underscoring the model's utility in portfolio management. Moreover, Sial's study (2021) underscored the utility of the CAPM model in forecasting stock returns, specifically on the Karachi Stock Exchange.

However, the foundation of CAPM rested on certain assumptions, including the homogeneity of investor expectations, the absence of transaction costs, and universal access to identical information. Recent research critiques of the theory have emerged, based on these assumptions. For instance, Duffie, Malamud, and Manso's study (2017) uncovered the diversity of investor beliefs, suggesting that convergence might not be assured, while also highlighting the significant impact of transaction costs on asset pricing. Similarly, Serra, Horst, and Verwijmeren (2020) shed light on the potential influence of information asymmetry on the CAPM model's performance.

In the context of the study on "Risk literacy and household income generation among SACCO members in Narok County, Kenya," CAPM was relevant for understanding individual investment decisions and their consequences for income generation. It offered a theoretical framework to explore how investors make choices, potentially examining how risk literacy influenced the expected returns of SACCO members' portfolios.

2.3 Conceptual Framework

A conceptual framework was used to guide the study. The conceptual framework consisted of four independent variables and one dependent variable (Figure 2.1). The independent variables were saving literacy, investment literacy, financial technology literacy, and risk literacy. The dependent variable was household income generation.

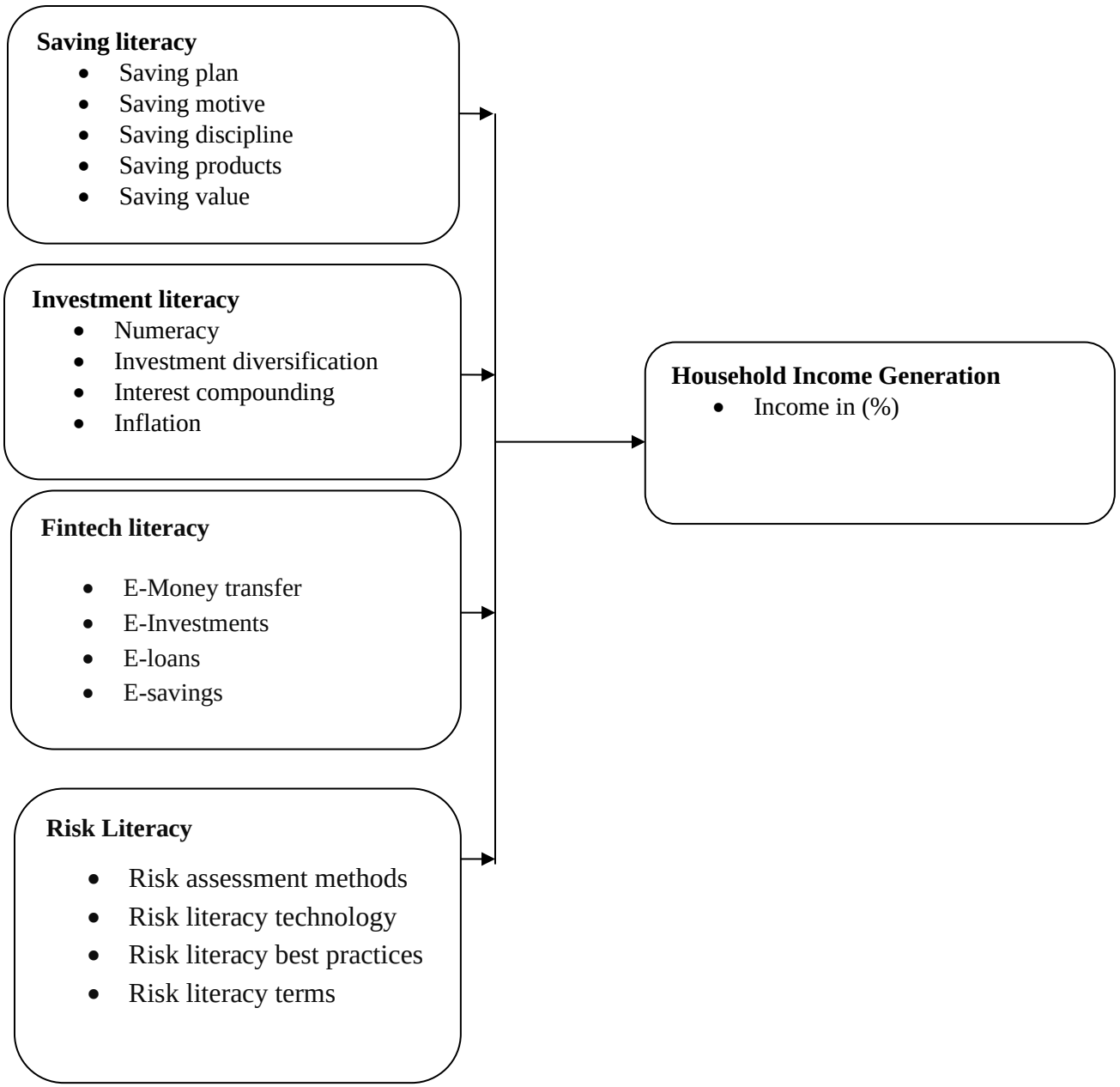


Figure 2.1: Conceptual Framework

Source (Author, 2023)

2.3.1 Saving Literacy and Household Income Generation

Saving literacy holds a pivotal role in shaping income generation through its influence on household saving behavior and financial decision-making (Barua & Sharma, 2022). Within this study, several key saving literacy indicators were utilized, each exerting specific effects on household income generation:

Firstly, a saving plan signifies the extent to which a household has a well-defined and clear strategy for saving money. Research conducted by the Organization for Economic Cooperation and Development (OECD, 2021) revealed that households with elevated literacy levels were more inclined to establish and adhere to a saving plan. With a concrete plan in place, households could effectively prioritize their saving objectives and allocate resources accordingly, thereby augmenting household income generation.

Secondly, the saving motive delves into the reasons behind households' decisions to save money. A study by the World Bank (2020) uncovered that households with heightened literacy levels tended to save for the long term and placed importance on goals such as retirement and education. Households committed to long-term saving goals were more prone to amass wealth and generate income over time. By prioritizing these objectives, households could invest in their future, fostering financial stability, and ultimately contributing to income generation.

Thirdly, saving discipline pertains to a household's ability to adhere to their saving plan and resist impulsive expenditures. Research by the Federal Reserve Bank of St. Louis (2021) indicated that households with heightened literacy levels were better equipped to exhibit saving discipline and curb impulsive spending tendencies. Households

demonstrating such discipline and resisting impulsive purchases were more likely to attain their financial aspirations, accumulate wealth, and consequently bolster income generation.

The fourth indicator, saving products, encompasses the array of financial instruments accessible to households for saving money. A study conducted by the United Nations Capital Development Fund (2021) demonstrated that households with enhanced literacy levels were more apt to access a diverse range of saving products and possess a comprehensive understanding of the associated benefits and risks. By leveraging a variety of saving products and comprehending their advantages and potential pitfalls, households could maximize their savings potential, leading to heightened income generation.

Lastly, saving value pertains to the degree to which households prioritize the act of saving money. Research from the Federal Reserve Bank of Boston (2020) elucidated that households with elevated literacy levels were more inclined to value saving and perceive it as a fundamental component of financial well-being. Households that recognized the significance of saving and comprehended its enduring benefits were more likely to accord priority to their saving objectives, amass wealth over time, and thereby bolster income generation. Leveraging these indicators, the study discerned the substantial role of saving literacy in shaping household income generation (Barua & Sharma, 2022).

2.3.2 Investment Literacy and Household Income Generation

To elucidate the pivotal role of investment literacy in household income generation, this study focused on four crucial indicators, as underscored by prior research which include numeracy, investment diversification, interest compounding and inflation (Akuno, 2017). First and foremost, numeracy was examined, encompassing the grasp of and proficiency

in working with numbers—a fundamental aspect of financial literacy. As posited by Lusardi and Mitchell (2021), a robust numeracy foundation facilitated improved financial decision-making, thereby exerting a positive influence on household income generation. Numeracy proficiency was assessed through inquiries designed to gauge respondents' ability to perform basic mathematical calculations and interpret numerical data presented in tables or graphs.

Next in focus was investment diversification, which entailed the practice of spreading investments across a spectrum of financial products or instruments, including stocks, bonds, mutual funds, and ETFs. As revealed by Li and Liang's (2021) study, investors who diversified their portfolios across various investment vehicles tended to achieve superior investment performance. The indicator assessed respondents' familiarity with different investment vehicles and their proactive use of multiple avenues to diversify investments, thereby augmenting income.

Another facet examined was the understanding of interest compounding, serving as a pivotal indicator of investment literacy. Interest compounding involved the reinvestment of interest earnings from an investment, generating additional interest in subsequent periods. Research conducted by Aizenman, Binici, and Hutchison (2021) discerned that a sound comprehension of interest compounding translated into more informed investment decisions and higher returns, thus positively influencing household income generation.

Lastly, the study scrutinized inflation literacy as another pivotal indicator of investment literacy. Inflation, denoting the gradual rise in prices over time, erodes the purchasing power of money—a critical consideration for investors as it directly impacts the actual

value of their investments. As noted in the study by Białowąs, Czepliewicz, and Pawelec (2022), inflation literacy was instrumental in guiding better investment decisions, thus contributing to enhanced household income generation.

By delving into these four key indicators, the study sought to gauge the extent of investment literacy among households and discern its reverberations on income generation. The hypothesis underpinning the study posited that households with elevated levels of investment literacy, as measured by numeracy, risk diversification, comprehension of interest compounding, and inflation literacy, would make more informed investment decisions, thereby leading to higher income generation. The study's findings aimed to shed light on the paramount significance of investment literacy in the pursuit of financial well-being and to inform endeavors aimed at enhancing financial education and literacy programs for individuals and households.

2.3.3 Fintech Literacy and Household Income Generation

To delve into the impact of financial technology literacy on household income generation, this study scrutinized four pivotal indicators elucidated by prior researchers, as put forth by Goyal and Kumar (2021): E-Money transfer, E-Investments, E-Loans, and E-Savings. The first indicator, E-Money transfer, encompasses the electronic movement of funds via digital platforms, including mobile banking, online banking, and electronic wallets. As highlighted in a study by Chowdhury, Rahman, and Uddin (2022), E-Money transfers facilitate swift and convenient financial transactions, potentially augmenting households' income-generating capabilities.

The second indicator, E-Investments, revolves around digital investment platforms that empower households to engage in financial products such as stocks, bonds, and mutual funds. According to insights from Niazi and Abbas (2021), E-Investments broaden households' investment horizons and enhance convenience, potentially fostering wealth accumulation.

The third indicator, E-Loans, pertains to loans processed and disbursed via digital channels like mobile apps and online lending platforms. Agrawal (2021) underscored that E-Loans offer rapid and accessible credit access, enabling households to invest in education or embark on entrepreneurial ventures, thereby potentially bolstering their income.

Lastly, E-Savings denotes digital savings platforms that enable households to save money online. Saini, Sharma, and Goyal (2021) noted that E-Savings offer convenient and secure avenues for households to accumulate funds, potentially contributing to sustained income growth. Through the examination of these indicators, the researcher sought to discern the correlation between financial technology literacy and household income generation. The resultant findings shed light on how households leverage digital platforms for financial management and income generation, thereby informing endeavors aimed at enhancing financial technology literacy and promoting economic well-being.

2.3.4 Risk Literacy and Household Income Generation

To investigate the influence of risk literacy on household income generation, this study adopted a four-fold framework rooted in previous research: risk assessment methods, risk literacy technology, best practices, and risk literacy terms (Garcia & Cokely, 2017). Firstly, risk assessment methods pertain to the strategies employed for identifying and evaluating

potential risks within a given context. Taking cues from Wang et al.'s (2021) exploration of risk assessment methods for critical infrastructure protection, this study utilized this metric to assess respondents' capacity to recognize and evaluate risks in their income-generation pursuits.

Secondly, risk literacy technology delves into the software and tools leveraged in risk management, encompassing elements like risk literacy information systems (RMIS) and predictive analytics. Kwak's (2020) investigation into the effectiveness of risk literacy technology adoption informed this metric. By scrutinizing risk literacy technology, the study gauged the respondents' level of technological acumen and its role in shaping risk management practices.

Thirdly, risk literacy best practices encompass the procedures and processes adopted to effectively handle risks. Guided by Lee, Smith, and Johnson's (2019) research on best practices in risk management, this metric assessed respondents' grasp of sound risk management techniques and their application in income-generation endeavors.

Lastly, risk literacy terms encompass the lexicon and terminology utilized within the realm of risk management, encompassing phrases like risk appetite, risk tolerance, risk assessment, and risk mitigation (Wojtasiak, 2015). Insights from Nweke and Ezeuduji's (2020) investigation into the role of financial literacy in risk literacy among undergraduate students informed this metric. The study assessed respondents' familiarity with risk literacy language and its practical application in their income-generation pursuits. By employing these four metrics, the study sought to comprehensively evaluate risk literacy among the respondents and comprehend its impact on household income generation.

2.3.5: Household Income Generation

The study adopted investment income as the dependent variable to gauge household income generation, recognizing it as income derived from diverse investment vehicles like stocks, bonds, mutual funds, and real estate. Investment income holds a pivotal role within the spectrum of household income, influenced by multifaceted factors such as investment returns, the invested amount, and the duration of holdings (Barber, Morse, & Yasuda, 2021).

In a recent investigation conducted by Smith (2021), investment income emerged as a central metric in exploring the intricate relationship between financial literacy and household income generation. The study brought to light a compelling discovery—households endowed with higher levels of financial literacy tended to exhibit elevated investment income, thereby unveiling a positive correlation between financial literacy and investment-derived income.

This metric assumed paramount significance within the study concerning financial literacy and household income generation. It served as a precise yardstick for assessing the impact of financial literacy on a substantial source of household income. By scrutinizing the nexus between financial literacy and investment income, the study unearthed potential mechanisms through which financial literacy exerts its influence on household income generation.

2.4 Empirical Review

This section looked at the previous studies on financial literacy and its influence on household income generation abroad, regionally, and locally. This enabled the researcher to identify the research gap the study intended to address.

2.4.1 Saving Literacy and Household Income Generation

Abroad, Bhardwaj and Saha (2022) conducted a study on the role of financial literacy on household savings and income in India. The study aimed to investigate the role of financial literacy in household savings behavior and income generation. The research design was a cross-sectional survey using primary data from a structured questionnaire. The target population was households in selected districts of the northern state of Uttar Pradesh, India. The sample size was 400 respondents, selected using a multi-stage sampling technique. The data's nature was quantitative and qualitative, analyzed through descriptive statistics and regression analysis. The instrument used was a structured questionnaire, and the test statistic used was multiple regression analysis. The study showed that financial literacy significantly influenced household savings behavior and income generation. However, the study's results could not be generalized to Kenya due to the presence of cultural and economic variables that may influence household saving behavior differently. Conducting a similar study in Kenya would provide valuable insights into the role of financial literacy in household savings behavior and income generation within the country's specific context. By examining the relationship between financial literacy and household savings behavior in Kenya, policymakers and researchers would better understand the factors influencing income generation and identify targeted strategies to improve financial literacy and promote sustainable economic growth.

Tung and Vuong (2022) conducted a study in Vietnam to examine the relationship between financial literacy and household income generation, explicitly focusing on the role of saving literacy. The study used a case study research design, and data were collected through a survey of 500 respondents. The sample was selected using a multi-stage sampling technique, with the target population being households in urban and rural areas of Vietnam. The study analyzed the data using regression analysis, and the instrument used to measure saving literacy was a self-administered questionnaire. The findings showed that saving literacy had a significant positive effect on household income generation. However, the study results could not be generalized to Kenya due to the variations in cultural and economic variables that impact household saving behavior. To gain insights into the relationship between saving literacy and household income generation in Kenya, there is a clear need for a similar study to be conducted in the country. Such a study would provide valuable information about the factors influencing saving behavior and income generation among Kenyan households. By examining the role of saving literacy in Kenya, policymakers and researchers could develop targeted interventions to enhance financial literacy and promote improved household income generation.

Barbara (2016) embarked on a study to delve into the impact of saving literacy on household income within the context of small-scale miners residing in the Amansie West District of Ghana. The primary objective was to meticulously evaluate how saving literacy influenced the generation of income in these households. The chosen research design took the form of a case study, tailored to this specific setting. The focal demographic comprised small-scale miners residing in the Amansie West District of Ghana, meticulously selected through the purposive sampling technique. This judiciously curated sample encompassed

a total of 230 individuals actively engaged in small-scale mining activities within the district. The nature of the data collected for this study spanned both quantitative and qualitative realms, offering a comprehensive perspective. The analytical toolkit deployed included descriptive statistics, which provided a numerical overview, and content analysis, which delved into the qualitative nuances present in the data. The study's findings notably illuminated the constructive role of saving literacy in the realm of household income generation, shedding light on its positive influence. However, it's essential to note that the study's outcomes were geographically specific to Ghana and the Amansie West District, as highlighted by Lusardi and Oggero (2017), who discerned substantial variations in financial literacy levels between Ghana and Kenya. Consequently, the study findings couldn't be directly extrapolated to Kenya, highlighting an imperative knowledge gap that beckoned further exploration through a similar study conducted within the Kenyan context.

Kapito,Chirwa, and Munthali (2020) conducted a study in Malawi to examine the relationship between saving literacy and household income generation. The study aimed to determine whether financial literacy interventions could improve household savings and income generation. A cross-sectional research design was used, and primary data was collected using a structured questionnaire from 556 respondents. The sample population included rural and urban households in Malawi. The study used a multi-stage, multi-stage sampling technique to select participants. The data collected were analyzed using descriptive statistics, multiple regression, and mediation analyses. The findings showed that financial literacy was negatively associated with household income generation and savings behavior. Also, the mediation analysis revealed that saving behavior did not significantly mediate the relationship between financial literacy and income generation.

The study provided insights into the importance of financial literacy in promoting household income generation and saving behavior in Malawi. However, the study did not compare the findings with other African countries, leaving a gap for a similar study in Kenya.

In Kenya, Mwaniki (2018) conducted a study investigating the relationship between financial literacy and small and medium enterprises (SMEs) growth in Nyeri County. Based in Nyeri County, the research employed a mixed research design to uncover financial literacy's positive influence on SME growth. The target population encompassed SMEs operating within the county, and purposive sampling was employed to select relevant participants. A sample size of 200 participants was selected. The study gathered quantitative and qualitative data, which were analyzed using descriptive statistics and content analysis techniques. The findings highlighted a favorable association between financial literacy and SME growth. The gap the present study seeks to address pertains to the role of savings literacy in household income generation, focusing on members of Savings and Credit Co-operative Organizations (SACCOs) in Narok County, Kenya, thus contributing to a deeper understanding of financial literacy's impact in a specific socio-economic context.

2.4.2 Investment Literacy and Household Income Generation

Abroad, Huang, Perales, and Western (2021) studied the relationship between investment literacy and household income generation in Pakistan. The study investigated how investment literacy affects households' financial behavior, particularly regarding investment decisions and income generation. The study followed a quantitative research design, and the target population consisted of Australian households with at least one adult

member. The researchers used a stratified random sampling technique to select the sample, and the final sample size was 2,524 households. The data were collected through an online survey and analyzed using structural equation modeling (SEM) and the partial least squares (PLS) method. The researchers used a multidimensional instrument to measure financial literacy, which included investment literacy as one of the dimensions. The investment literacy dimension measures the knowledge and understanding of various investment products and strategies, such as stocks, bonds, and mutual funds. The study used regression analysis to test the hypotheses and determine the effect of investment literacy on household income. The study revealed that investment literacy positively influenced household income through better investment decisions. Specifically, households with higher investment literacy were more likely to invest in higher-return investment products and strategies, increasing household income. However, the study also identified gaps in the existing literature, particularly in the lack of studies that examine the effect of investment literacy on household income generation in developing countries, including Kenya.

Lusardi and Mitchel (2017) studied investment literacy and household wealth accumulation. The study's main objective was to analyze the relationship between financial literacy and wealth accumulation, specifically regarding investments. The research design was cross-sectional, and data were collected from households in the Netherlands, Italy, and the United States. The target population included adults aged 50 and over who participated in the TIAA Institute-GFLEC Personal Finance Index survey. The sampling technique used was quota sampling. The sample size consisted of 1,200 respondents from each country. The nature of the data was both quantitative and qualitative. The methodology used was a combination of regression analysis and propensity score matching. The instrument used

was a survey questionnaire. The test statistic used was the coefficient of determination (R^2). The findings indicated that financial literacy is positively associated with wealth accumulation, mainly through investments. The study also identified a significant gender gap in financial literacy, with women having lower financial literacy levels than men. The study highlights the need for financial education programs to improve financial literacy and promote investment literacy. The gaps identified concerning the need for a similar study in Kenya include examining the relationship between financial literacy and wealth accumulation, mainly through investments, and assessing the effectiveness of financial education programs in promoting investment literacy among the population.

In the African context, Bwalya (2022) conducted a comprehensive study focusing on investment literacy, and its intricate relationship with household income generation within Zambia. This multifaceted study aimed to assess the prevailing levels of financial and investment literacy among households, examine their interplay with household income generation, and scrutinize the factors shaping these literacies. Employing a cross-sectional research design, the study provided a snapshot of Zambia's financial and investment literacy landscape, utilizing a stratified random sampling technique to select 340 households as contributors of valuable insights through structured questionnaires. The data underwent meticulous analysis, revealing low literacy levels, unexpected dissociation between literacy and income generation, and the influential roles of education and income levels. The study's call for interventions and future research resonated not only in Zambia but also in similar contexts, promising a path toward enhanced household income generation through improved financial and investment literacy.

Tchamyou, Asongu, and Odhiambo (2020) conducted a study on investment literacy, and household income generation in several African countries. The study examined the role of investment literacy on household income generation in Africa. The research design was a cross-sectional survey, and the target population was African households. The study used a multi-stage sampling technique, and the sample size was 28,000 households from 34 African countries. The nature of the data was primary data collected through a structured questionnaire. The study used a logit model to analyze the data. The findings showed that education, age, and gender positively and significantly affected household income generation. However, surprisingly, the study found that investment literacy negatively and significantly affected household income generation. This negative result suggests that investment literacy might not be as critical as previously thought in generating household income. There was a need for a similar study in Kenya to understand whether investment literacy has a similar effect on household income generation in the Kenyan context.

In Kenya, Mwatondo and Wekesa (2020) explored how investment literacy affects SACCOs' financial growth in Kwale County. Using a descriptive survey design, their study analyzed financial knowledge, attitude, behavior, and training's influence on SACCO growth. They surveyed 397 respondents, chosen through stratified random sampling, from a target of 15281 members across 80 licensed SACCOs in Kwale County. Pearson's correlation test highlighted significant positive links between financial aspects and SACCO growth, reinforced by regression results. The findings have implications for Kwale County's government, the national administration, academia, and policymakers, suggesting ways to enhance financial education, regulations, and poverty alleviation strategies. This study's significance extends to other sectors, laying the groundwork for further research

into financial literacy's impact on financial growth. The current study expounds profoundly on financial literacy about household income generation, explicitly focusing on investment literacy, which is fundamental in household decision-making, making the study very relevant.

2.4.3 Fintech Literacy and Household Income Generation

Liu, He, and Turvey (2021) studied financial technology literacy and household income generation, in China. The study used a cross-sectional research design and collected data through an online survey distributed to Chinese households. The study's target population was Chinese households with at least one member who had used financial technology services in the past year. A convenience sampling technique was used to select participants, resulting in a sample size of 468 respondents. The data collected was quantitative, and the study employed regression analysis as its primary methodology. The instrument used to measure financial technology literacy was a set of self-assessment questions, while income and other demographic data were obtained through direct questioning. The study's findings revealed that financial technology literacy had no significant role in household income generation, contrary to the researchers' initial expectations. However, the study did find a positive correlation between financial technology literacy and income level, education, and age. The study also identified gaps in existing literature on financial technology literacy and its role in household income generation, highlighting the need for further research. A similar study in Kenya could shed light on the relationship between financial technology literacy and income generation in a developing country with a rapidly growing financial technology sector.

Kim, Koo, and Jang (2022) studied financial technology literacy and household income generation in South Korea. The research design used was a cross-sectional survey, and the target population was households in South Korea. The study utilized a random sampling technique, and the sample size was 1,000 households. The nature of the data collected was primary data, which was gathered through self-administered questionnaires. The methodology employed in the study was quantitative, and the instrument used for data collection was a structured questionnaire. The test statistic used was the chi-square test. The study revealed that financial literacy was not significantly associated with household income generation or savings behavior. The study also found that other factors, such as education and financial knowledge, substantially influenced household financial behavior. The gaps identified in the study included further research on the effectiveness of financial technology education programs in promoting financial behavior and the need for similar studies in other countries, including Kenya, to understand the role of financial technology literacy in household financial behavior.

In Africa, Twumasi, et al. (2021) conducted a study on financial technology literacy and household income generation in Ghana. The study employed a cross-sectional research design, and the target population was individuals living in Ghana who had access to financial services. The researchers used a convenience sampling technique to select a sample of 400 respondents. The data was collected through self-administered questionnaires and analyzed using descriptive statistics and regression analysis. The instrument used in the study was a structured questionnaire. The study found that the respondents' financial and financial literacy level was generally low. There was a significant positive relationship between financial literacy and household income

generation. However, the study found no significant relationship between financial literacy and household income generation. The study identified a gap in the need for more financial technology literacy education to improve household income generation. A similar study in Kenya helped assess the level of financial technology literacy and financial literacy and their role in household income generation.

Kwagala and Munene (2022) studied financial technology literacy and household income generation in Uganda. The research design was a cross-sectional study, and the target population was households in Uganda. A multi-stage sampling technique was used to select the sample size of 400 households. Data were collected using a structured questionnaire, and the analysis was done using descriptive and inferential statistics. The study found that the level of financial literacy among households was low, and the use of financial technology was limited. The results also showed a positive relationship between financial technology literacy and household income generation. The study highlights the need for improved financial literacy programs incorporating financial technology education to enhance household income generation. A similar study in Kenya could provide valuable insights into the level of financial technology literacy and its role in household income generation, given the increasing adoption of digital financial services in the country.

In Kenya, Asila (2016) conducted a comprehensive study delving into the complex realm of financial investments by Small and Medium-sized Enterprises (SMEs) and their consequential impact on household income generation. The study, guided by a survey design approach, aimed to uncover the cost-effectiveness of acquiring advanced technology, navigate the risks inherent in technological investments, and decipher the sophisticated appraisal methods shaping these crucial investment decisions. In this vibrant

Kenyan setting, 107 SMEs participated, with 53 firms thoughtfully selected for data collection through structured questionnaires and enlightening interviews. The ensuing data underwent meticulous analysis, featuring frequencies, percentages, and the venerable Pearson correlation coefficient. The findings unveiled a significant relationship between the choice to acquire or lease technology, FinTech literacy, access to financial services, and a distinct preference for discounted methods in investment appraisal—factors collectively bolstering household income generation. However, the study's methodological distinction as a survey design serves to highlight the multifaceted nature of research, with varying approaches tailored to illuminate diverse facets of the intricate mosaic of financial investments and their far-reaching implications for household financial well-being.

2.4.4 Risk Literacy and Household Income Generation

Bakar et al. (2020) conducted a study in Malaysia to investigate the relationship between risk literacy and income generation among smallholder farmers. The study used a cross-sectional research design and employed a random sampling technique to select 360 smallholder farmers as participants. The researchers collected data through structured interviews and analyzed it using regression analysis. The study aimed to determine the level of risk literacy among smallholder farmers, identify the factors that influence their risk literacy behavior, and examine the relationship between risk literacy and income generation. The study found that risk literacy significantly influenced smallholder farmers' income generation, and higher risk literacy levels were associated with higher income generation. However, the study also revealed that only a tiny proportion of smallholder farmers had high levels of risk literacy, indicating a need for interventions to improve risk literacy among smallholder farmers. A study gap existed, which the current study filled

since Kenya had unique variables that influence the behavior of households while making risk literacy-related decisions in Malaysia.

Ali et al. (2022) conducted a study in Pakistan to investigate the relationship between risk literacy practices and income generation among small and medium-sized enterprises (SMEs). The study used a descriptive research design and selected 200 SMEs using convenience sampling. The researchers collected data through structured questionnaires and analyzed it using regression analysis. The study aimed to determine the extent to which SMEs use risk literacy practices and examine the relationship between these practices and income generation. The study found that risk literacy practices significantly influenced income generation, with SMEs that used more risk literacy practices generating higher incomes. The findings suggest that promoting risk literacy practices among SMEs can improve their income generation. The study used SME members, while the current study used SACCO members, and therefore, it would contribute significantly to the existing literature.

Stojanovic et al. (2019) conducted a study in Nigeria to investigate the role of risk literacy on income generation among small and medium-sized enterprises (SMEs). The study used a cross-sectional research design and selected 150 SMEs using a random sampling technique. The researchers collected data through structured questionnaires and analyzed it using regression analysis. The study aimed to explore the relationship between risk literacy practices and income generation among SMEs in Serbia. The study found that risk literacy practices positively influenced income generation among SMEs in Nigeria. The findings suggest that promoting risk literacy practices can improve income generation

among SMEs in Nigeria. A gap existed, which the current study filled in Kenya since Nigeria's levels of risk literacy are higher than in Kenya (Lusardi & Mitchel, 2017).

Kayiah (2016) conducted a study investigating risk literacy's impact on the personal wealth of judiciary personnel in Nairobi City County. The study used a mixed research method. The target population comprised judiciary employees within the city county. The sampling technique employed was purposive sampling, and the sample size was 150 members of the Judiciary in Nairobi County. Qualitative data were collected, and content analysis was employed for data analysis. The study's findings revealed that financial and risk literacy positively affected personal wealth among judiciary employees in Nairobi City County. However, the effect was deemed statistically insignificant. This study's significance lies in its potential to fill the gap in understanding the role of risk literacy in influencing household income generation among SACCO (Savings and Credit Co-operative) members in Narok County, Kenya.

2.5 Summary of Literature Review and Research Gaps

The reviewed literature highlighted several gaps in previous studies on the role of financial literacy in household income generation. Studies conducted in various countries such as India, Vietnam, China, the United States, Malawi, Ghana, and Kenya provided valuable insights into the relationship between saving, investment, fintech and risk literacy on household income generation. However, the methodological differences, target populations used, and cultural and economic variables that influenced saving behavior limited their applicability to Kenya.

Studies on saving literacy and household income generation from other countries cannot be directly applied to Kenya due to cultural and economic differences. Additionally, Kenyan studies have not thoroughly evaluated saving skills in relation to household income, leaving a gap this study aims to fill. Similarly, research on investment literacy from countries like Australia, the Netherlands, Italy, the United States, Zambia, Nigeria, and Indonesia is less relevant due to differences in financial literacy, culture, and technology. Kenyan studies have focused on financial behavior and knowledge, leaving a gap in investment literacy that this study intends to address.

Furthermore, studies on financial literacy and household income generation conducted in China, South Korea, and Ghana and on risk literacy and household income generation in Malaysia, Pakistan, Serbia, Taiwan, and South Korea do not apply to Kenya. The differences in income levels, financial literacy, and cultural, economic, and technological variables between these countries make them not applicable in Kenya. While studies conducted in Uganda and Kenya exist, they differ in methodology and the target populations addressed from the current study, highlighting a research gap that needs to be addressed.

Therefore, the current study aimed to fill these gaps by focusing on the relationship between financial literacy and household income generation in Kenya, specifically focusing on saving, investment, financial, and risk literacy variables vital in understanding household income generation. Further, the study considered the unique cultural, economic, and technological variables that influenced household financial decisions in Kenya.

Moreover, unlike previous studies that focused on specific aspects of financial literacy, the current study looked at financial literacy, including knowledge of financial products and services, budgeting, risk literacy, and financial planning.

The study literature review and the research gap this study intended to fill are summarized in Table 2.1.

Table 2.1 Summarized Literature Review

Author and Year	Topic	Place of Study	Research Design	Findings	Research Gaps
Bhardwaj and Saha (2022)	Role of saving literacy on household income generation	India	Quantitative	Positive relationship between saving literacy and income generation	Cultural and economic variables limit applicability
Tung and Vuong (2022)	Role of saving literacy on household income generation	Vietnam	Case study	Positive effect of saving literacy on income generation	Cultural and economic variables limit applicability
Kapito et al. (2020)	Role of saving literacy on household income generation	Malawi	Cross-sectional	Negative effect of saving literacy on income generation	Differences in methodology limit applicability in Kenya
Barbara (2016)	Role of saving literacy on household income generation	Ghana	Qualitative	Negative effect of saving literacy on income generation	Differences in literacy levels and target populations limit applicability in Kenya
Mwaniki (2018)	Financial literacy and SME growth	Nyeri County	Mixed research design	Positive association between financial literacy and SME growth	Differences in methodology and variables tested limit applicability in Kenya
Perales et al. (2021)	Financial literacy & household income generation	Australia	Descriptive	Positive relationship between investment literacy and income generation	Differences in literacy levels, culture, and technology limit applicability to Kenya
Lusardi et al. (2017)	Financial literacy & household income generation	Netherlands, Italy, US	Survey	Positive association between investment literacy and financial outcomes	Differences in literacy levels, culture, and technology used limit applicability to Kenya

Author and Year	Topic	Place of Study	Research Design	Findings	Research Gaps
Bwalya et al. (2022)	Financial literacy & household income generation	Zambia	Cross-sectional Survey	Positive relationship between investment literacy and income generation	Differences in levels of investment literacy, limit applicability to Kenya
Tchamyou et al. (2020)	Financial literacy & household income generation	38 African Countries	Panel regression	Negative effect of financial literacy on income generation	Not specific to Kenya, does not consider country-specific social and economic variables
Mwatondo & Wekesa (2020)	Financial literacy impact on SACCOs growth	Kwale County	Mixed method	Positive links between financial aspects and SACCO growth	Gap in methodology and study variables used
Liu et al. (2021)	Financial literacy & household income generation	China	Quantitative	Fintech literacy positively influences income generation	Findings not applicable to Kenya due to differences in social and economic variables
Kim et al. (2022)	Fintech literacy & household income generation	South Korea	Survey	Fintech literacy positively affects income generation	Findings not applicable to Kenya due to differences in social and economic variables
Adjei et al. (2021)	Fintech literacy & household income generation	Ghana	Qualitative	Fintech literacy has a positive role on income generation	Methodology and levels of fintech literacy differences
Kwagala and Munene (2022)	Financial literacy & household income generation	Uganda	Survey	Financial literacy negatively influences income generation	Methodological differences from current study in Kenya

Author and Year	Topic	Place of Study	Research Design	Findings	Research Gaps
Bakar et al. (2020)	Risk literacy and Household Income Generation	Malaysia	Cross-sectional	Risk literacy influenced income generation of smallholder farmers, but improvement needed	Interventions needed to enhance risk literacy among smallholder farmers in Kenya
Tariq et al. (2019)	Risk literacy Practices and Income Generation	Pakistan	Descriptive	Risk literacy practices influenced income generation among SMEs	Study focused on SMEs, contributes to existing literature in SACCOs
Stojanovic et al. (2019)	Risk literacy and Income Generation	Nigeria	Cross-sectional	Risk literacy practices positively influenced income generation among SMEs	Kenya and Nigeria have different risk literacy levels
Mayiah (2016)	Financial Literacy and Risk on Personal Wealth	Nairobi County	Mixed methods	Positive effect of financial and risk literacy on personal wealth among individuals	Differences in methodology and target population used

Source (Author, 2023)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the methodology that was used in the study. It contains the research design, target population, sampling frame, sample size, and sampling techniques. In addition, it also covers data collection instruments and pilot tests. Finally, data Processing and analysis and the diagnostic tests are discussed.

3.2 Research Design

A research design is a blueprint for data collection, measurement, and analysis (Pandey & Pandey, 2021). The research used a descriptive research design. The descriptive research design involved gathering data that described events, organized, tabulated, depicted, and described the data (Seaman et al., 2022). Descriptive studies portray the variables by answering the who, what, when, and how questions. The choice of the method was justified by the fact that the researcher intended to discover and measure the relationships between variables (Seaman et al., 2022). Prior researchers had widely used the research design to study relationships between variables, justifying it as a reliable tool and thus was appropriate for this study (Silva et al., 2021).

3.3 Target Population

Tang, Kreuter, and Van (2018) define a target population as the specific elements about which information is desired. This study's target population was the 3050 active SACCO members from the 14 SACCOs of all categories in Narok County, Kenya (Narok County Registrar of co-operatives, 2023).

3.4 Sample Frame

A sample frame can be defined as a list of all units in the population from which the study sample will be selected (Rahi, 2017). The study sample frame comprised the 14 SACCOs within Narok County, Kenya (Narok County Registrar of Co-operatives, 2023).

Table 3.1: List of SACCOs in Narok County, Kenya

	Members Categories		
Name	**Registered**	**Active Members**	**With loans**
Agricultural Co-operative SACCO	230	200	90
Cosmopolitan SACCO	220	150	80
Good Hope SACCO	200	150	80
Imarisha SACCO	200	150	100
Maasai Mara University SACCO	651	580	492
Narok Boda Boda SACCO	620	400	210
Narok Eagles SACCO	310	200	160
Narok Fleet transport SACCO	150	120	70
Narok Golden Chance SACCO	430	320	200
Narok Star SACCO	180	150	80
Ollin SACCO	280	200	100
Platinum credit SACCO	150	130	60
Puan SACCO	240	180	70
Yamuna SACCO	160	120	60
Total	**4021**	**3050**	**1852**

Source: (Narok County Registrar of Co-operatives, 2023)

3.5 Sample Size and Sampling Techniques

Rahman, Anwar, and Ali (2022) define a sample as a group of cases comprising a portion of the target population that the researcher carefully selects for analysis to determine facts about that population. According to Kumar and Habakaramo (2022), the sampling

technique is how a researcher sets the required sampling units from a population to identify their sample.

The study used a two-stage probability sampling technique. Stratified sampling was used to put the SACCO members into strata (those who had only been saving without taking loans and those who had been saving and had taken loans); this enabled the researcher to examine each category alone to get a more accurate data on the specific variables of interest (illustrated in table 3.2 & 3.3). Purposive sampling was used to select members from the strata based on unique aspects of interest to the researcher, such as age, gender, and level of education.

Table 3.2 Total Members Selected Per Category

No.	Members category	Members-per category	Proportion per-category	Sample per-category
1.	Active savers	1198	40%	87
2.	With loans	1852	60 %	130
	Total	**3050**	**100%**	**217**

Source: (Narok County Registrar of Co-operatives, 2023)

Table 3.3 Total Members Selected from Each SACCO Per Category

SACCO Name	Active Members	Savers	%	Sample	With loans	proportion	Sample	Total
Agricultural Co-operative	200	110	9%	8	90	5%	6	14
Cosmopolitan	150	70	6%	5	80	4%	6	11
Good Hope	150	70	6%	5	80	4%	6	11
Imarisha	150	50	4%	4	100	5%	7	11
Maasai Mara University	580	88	7%	6	492	27%	35	41
Narok Boda Boda	400	190	16%	13	210	11%	15	28
Narok Eagles	200	40	3%	3	160	8%	11	14
Narok Fleet Transport	120	50	4%	4	70	4%	4	8
Narok Golden Chance	320	120	10%	9	200	11%	14	23
Narok Star	150	70	6%	5	80	4%	6	11
Ollin	200	100	8%	7	100	5%	7	14
Platinum credit	130	70	6%	5	60	3%	4	9
Puan	180	110	9%	8	70	4%	5	13
Yamuna	120	60	5%	4	60	3%	4	8
Totals	**3050**	**1198**	**100%**	**87**	**1852**	**100%**	**130**	**217**

Source: (Narok County Registrar of Co-operatives, 2023)

The study's sample size was determined using Yamane's (1967) proportional sampling formula as follows: $n= N/ (1+ (e)^2)$

Where n represents the Sample size

N represents the population under study

E represents margin error (0.05) and

1 represents a constant

The sample size was calculated as follows:

n = 3050 / (1 + (3050*(0.05) ^2)) = 216.56

Rounding up to the nearest whole number, the study sample size using the Taro Yamane formula was 217 SACCO members.

3.6 Data Collection Instruments

The study used primary data that was collected using a self-administered structured questionnaire. The questionnaire was structured on a 5-point Likert scale from 1 to 5. The Likert-type format was selected as the format yields equal-interval data and increases the response rate (Rahi, 2017). The questionnaire has been a vital tool in collecting data among the prior researchers on the current study topic, justifying that it provided the required data to be tested by the linear regression model chosen for this study (Kim et al., 2022; Liu et al., 2021; Kapito et al., 2020).

3.7 Pilot Test

The questionnaire was pre-tested using 22 SACCO members from Narok line SACCO, who were not included in the main study. The choice of the 22 respondents was informed by Cooper (2018), who suggested that a pilot study sample should be 10% of the study's

sample size. The pre-testing helped to point out difficult questions that could be interpreted differently by different people and those that were similar. After the pre-testing, improvements were made to the questionnaire, and the final copies were produced.

3.7.1 Validity of Research Instruments

Validity is the accuracy and meaningfulness of inferences based on the results. It is a measure of how well a test measures what it is supposed to measure (Aziz, 2021). For this study, the instrument's validity was established using the KMO sampling adequacy formula from factor analysis. The results are presented in Table 3.4.

Table 3.4 Validity of the Instrument

Items/scale	Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)	Sig.
Saving literacy	.692	.000
Investment literacy	.804	.000
Financial technology literacy	.740	.000
Risk literacy	.727	.000
Household income generation	.726	.000

Source: (Field data, 2023)

The results in Table 3.4 show that the instrument was valid, as all KMO values were above 0.4 (Aziz, 2021).

3.7.2 Reliability of Research Instruments

Reliability gauges the extent to which a research tool produces reliable outcomes or information after numerous trials (Cooper & Schindler, 2018). Based on the order of numbering of the questionnaire items, Cronbach's coefficient alpha was used to determine

the reliability of the research instrument for either even or uneven items (Cooper &Schindler,2018). As a general rule, a proposed psychometric instrument should only be employed if a value of 0.70 or higher is obtained on a sizable sample, according to (Fraenkel & Wallen, 2020). With the aid of the SPSS, the reliability of this study was calculated, and the results are presented in Table 3.5.

Table 3. 5: Reliability Test results

Variable	**Cronbach's Alpha**	**N of Items**
Saving Literacy	0.945	5
Investment Literacy	0.917	4
Financial Technology Literacy	0.921	4
Risk Literacy	0.929	3
Household income	0.930	4
Average Score	**0.928**	20

Source: (Field Data, 2023)

The results in Table 3.5 show that the average score of the reliability test had a Cronbach's Alpha value of 0.928, indicating that the questionnaire was valid for this research (Fraenkel & Wallen, 2020).

3.8 Data Processing and Analysis

Data processing and analysis play a pivotal role in transforming raw data into meaningful insights and conclusions. Following the rigorous process of data collection, the collected data underwent a meticulous journey of organization and cleaning, comprising crucial steps such as sorting, coding, and tabulating the responses (Smith et al., 2020).

3.8.1 Data Processing

Data processing, as a foundational step in this journey, involves systematically arranging and structuring the collected data to make it amenable to analysis. It encompasses actions like data entry, validation, and transformation. During this phase, the data were carefully organized into a structured format, ensuring accuracy and consistency in preparation for the subsequent analytical stages (Johnson & Christensen, 2020).

3.8.2 Data Analysis

Data analysis, on the other hand, represents the heart of the research endeavor, where the collected and processed data are subjected to rigorous examination and interpretation. In this study, the analysis was conducted using SPSS version 27 statistical software, a powerful tool for conducting a wide range of statistical analyses (Field, 2018). The analytical procedure remained consistent across all study objectives to maintain methodological rigor and ensure the reliability of the findings.

Descriptive statistics were deployed to provide a comprehensive summary of the data, revealing key insights through measures such as frequencies, percentages, means, and standard deviations (Gall et al., 2021). These statistics offer a clear snapshot of the dataset's characteristics and aid in understanding the central tendencies and variations within it.

Inferential statistics, on the other hand, went a step further by drawing meaningful conclusions from the sample data to make inferences about the broader population (Salkind, 2020). This involved a careful examination of relationships between independent and dependent variables. To test the presence of a linear relationship, Pearson's moment correlation coefficient was employed at a 95% confidence level (Hair et al., 2019). This

statistical test provided a robust method for assessing the strength and direction of associations between variables, a crucial aspect in hypothesis testing and drawing substantive conclusions.

3.8.3 Analytical Model

The simple linear regression model was used to assess the magnitude of the independent variables' effect on the dependent variable. The choice of the model was justified by the fact that the researcher's goal was to test the magnitude of the effect of an independent variable on a dependent variable, which is best achieved by the use of this model as justified by prior researchers (Nicol, 2020; Li, Johnson & Williams, 2021).

In line with the specific objectives of the study, the regression coefficients associated with the independent variables, namely savings, investment, fintech, and risk literacy, were rigorously examined to ascertain their impact on the dependent variable, Household Income Generation. The critical threshold for significance was set at a p-value of ≤ 0.05, operating within a robust 95% confidence interval. The attainment of this threshold held profound implications, indicating that each of these independent variables played a statistically significant role in influencing the overarching objective of the study, which was the Household Income Generation.

The regression equation model was of the form; $Y = \beta_0 + \beta_i X_i + \varepsilon_i \; ; i = 1, 2, 3, 4.$

Where:

Y represented- Household Income Generation

β0 represented- Constant

β_i is the slope parameter

X_1 represented- Saving literacy

X_2 represented- Investment Literacy

X_3 represented - Fintech Literacy

X_4 represented –Risk Literacy

3.8.4 Model Adequacy Test

For model adequacy, at least one of the independent variables should affect the dependent variable. ANOVA tables were used to test the adequacy of the regression model. A P-value ≤0.05 at a 95%confidence level concluded that the model was adequate by rejecting the following hypothesis:

H_0: The model is not adequate

H_1: The model is adequate.

To identify the specific variable affecting the dependent variable, an individual parameter test was conducted using the t-test given:

$$t = \frac{\beta_i}{SE(\beta_i)}$$

A P-value ≤ 0.05 at the 95% confidence level concluded that the particular independent variable significantly affected the dependent variable from the given hypothesis.

$H_{0:}$ The Parameter is not significant ($\beta_i = 0$)

H_1: The parameter is significant ($\beta_i \neq 0$)

3.9 Diagnostic Tests for Linear Regression

Before conducting inferential statistics, diagnostic analyses were performed to test the assumption of linear regression analysis. The Diagnostic tests included normality, linearity and autocorrelation.

3.9.1 Normality test

Normality refers to a fundamental statistical concept that pertains to the presumption that data adheres to the characteristics of a bell-shaped or Gaussian distribution, featuring symmetry around the mean (Boedec, 2016). During the data transformation phase, a pivotal normality test was executed to scrutinize whether the transformed values of the scale variables aligned with this critical normal distribution assumption (Boedec, 2016). This evaluation held paramount significance because when data impeccably conforms to a normal distribution, it bestows the capability to employ Pearson's correlation and linear regression methods, ensuring the accuracy and substantive significance of the study's data analysis (Boedec, 2016). The test for normality was done using Kolmogorov-Smirnov and Shapiro-Wilk tests. The null hypothesis to be tested was stated as follows:H_{0S}: The data follows normal distribution. According to Akinyele, (2017), if the P-value for the variables is less than 0.05 at 95% confidence level the null hypothesis that the data follows normal distribution is rejected and if the P-value for the variables is greater than 0.05 at 95% confidence level it indicates that there is insufficient evidence to reject the null hypothesis that the data follows normal distribution.

3.9.2 Linearity test

A linearity test is a crucial statistical analysis that assesses whether there is a linear relationship between two or more variables (Smith, Johnson, & Brown, (2020). It helps

determine whether a linear regression model is appropriate for the data being analyzed. One common method to check for linearity is by using scatter plots, which visually display the relationship between variables. In a study, scatter plots can be used to examine the relationship between the independent variable(s) and the dependent variable (Smith et al.,2020). By plotting the data points on a graph, researchers can visually assess whether there is a clear linear trend or if the relationship appears to be nonlinear, such as exponential or quadratic. This study used Scatter plots to test for linearity due to its advantage of allowing researchers to identify outliers, clusters, or any patterns that might affect the linearity of the data (Smith et al.,2020).

3.9.3 Autocorrelation test

Autocorrelation is when the error term is correlated to the preceding error term (Abdulhafedh, 2017). Its presence does not affect the unbiasedness of the estimates but leads to poor conclusions due to wrong hypothesis testing. The regression model assumes that the errors from the prediction line are independent. This is a critical assumption for statistical tests to be accurate. Serial correlation is problematic to linear panel data models because its presence renders the standard errors biased and makes the estimated regression coefficients consistent but inefficient (Abdulhafedh, 2017). The presence of autocorrelation was checked using the Durbin-Watson test. The null hypothesis (H_0), was stated as follows: Autocorrelation is present in the data. According to Abdulhafedh, (2017), If the Durbin-Watson statistic falls within the range of $1.5 \leq d \leq 2.5$, it suggests that there is no significant autocorrelation present in the data hence the null hypothesis that Autocorrelation is present in the data is rejected and the vice versa is true.

3.10 The Study Ethical Considerations

First and foremost, given that the study involved human subjects, it was imperative to uphold the utmost respect for their rights and well-being. This commitment was actualized through the meticulous process of obtaining informed consent, wherein participants were comprehensively briefed on the research's objectives, their entitlements as participants, and their unequivocal right to withdraw from the study at any juncture.

Secondly, the study encompassed individuals from vulnerable groups, including those with limited literacy levels, who might not have possessed a full grasp of the implications of their participation. Consequently, it was paramount to safeguard against any form of coercion and to scrupulously protect their privacy. To this end, the researcher diligently ensured confidentiality by employing anonymous codes instead of personal identifiers, thereby fortifying the shield around participants' sensitive information.

Thirdly, at the core of the study's ethical framework was an unwavering commitment to ensuring that participants emerged from the research unscathed, both physically and psychologically. This principle guided the formulation of questions that were inherently non-intrusive, non-sensitive, and thoroughly appropriate, precluding any potential harm or discomfort.

Lastly, the study aspired not only to advance academic knowledge but also to be of tangible benefit to both its participants and the broader community. In this spirit, the researcher went beyond the call of duty by providing participants with comprehensive feedback on the study's outcomes and elucidating how their invaluable participation had directly contributed to the research's findings. This ethical underpinning was indispensable in

upholding the study's credibility while vehemently safeguarding the inalienable rights of the participants involved.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter encompasses the presentation of the study primary questionnaire-based data. It encapsulates demographic characteristics, diagnostic test outcomes, descriptive analyses, correlation and regression assessments, hypothesis testing, and the discussion of significant findings, visually supported by tables and figures for enhanced clarity.

4.2 Response Rate

The response rate of the questionnaires was analyzed, and the results were summarized and presented in Table 4.1.

Table 4.1 Response Rate

Response rate	Frequency	Percentage
Responded	202	93.1%
Not-Responded	15	6.9%
Total	**217**	**100**

Source (Field Data, 2023)

The results in Table 4.1 show that 217 questionnaires were distributed to the respondents, who were members of SACCOs in Narok County. Out of these, 202 questionnaires were received and used for analysis, resulting in a return rate of 93.1%. This return rate is considered adequate for a descriptive study, as a response rate greater than 70% is generally deemed acceptable (Marton, 2016). Table 4.1 presents a summary of the results.

4.3 Demographic Information

The characteristics of the respondents were analyzed as follows:

4.3.1 Gender

The data on the gender of the respondents was analyzed, and the results are presented in Table 4.2.

Table 4.2: Gender of Respondents

	Frequency	**Percentage%**
Male	74	36.6
Female	128	63.4
Total	**202**	**100.0**

Source (Field Data, 2023)

The results in Table 4.2 show that the majority of the study participants were female (63.4%) compared to their male counterparts, whose total representation was 36.6%, which was similar to a study done by Amisi (2018) but different from a study by Kim (2021), whose results recorded more male than female participants. This gender distribution is valuable in this research as it sheds light on the representation of men and women within SACCOs, and helps justify the data used for this study was in adherence to gender equality policies, and guides the development of gender-responsive strategies that support the financial well-being of all members (Patel,2023).

4.3.2 Age

The data on age of the respondents was analyzed, and the results are presented in Table 4.3.

Table 4.3: Age Limit in Years

Years	Frequency	Percentage %
18-20	5	2.5
21-30	69	34.2
31-40	65	32.2
41-50	42	20.8
Above 50	21	10.3
Total	**202**	**100.0**

Source: (Field Data, 2023)

The results in Table 4.3 show that most respondents were aged between 21 and 30 (34.2%). This is followed by the age group of 31-40 years, accounting for 32.2% of the respondents. The age group of 41-50 years constituted 20.8% of the respondents, while those above 50 years accounted for 10.4%. A small proportion of respondents, 2.5%, fell within the age range of 18-20 years. These results indicate that the majority of the respondents were relatively aged between 21 to 40 years which implies that most members of SACCOs in Narok County are in the productive age bracket. As a result, SACCOs should therefore implement motivational strategies to boost productivity and retain their members so as to help in boosting household income generation. These findings are similar to those of Lusardi and Mitchel (2017) but contradict those of Kim (2021), who found that most respondents were those aged 50 and above, meaning they have already passed their peak productivity period. Understanding the age distribution of SACCO members is crucial in research as it helps identify the age-related dynamics and preferences within the membership. It enables researchers and policymakers to develop strategies to engage

different age groups effectively, address their specific needs, and promote SACCOs' long-term sustainability and success (Park et al.,2023).

4.3.3. Education level

The data on the respondents' education was analyzed, and the results are presented in Table 4.4.

Table 4.4: Education Level

Level	Frequency	Percentage %
Primary	6	3.0
Secondary	23	11.4
College	72	35.6
University	85	42.1
Postgraduate	16	7.9
Total	**202**	**100.0**

Source: (Field Data, 2023)

The results in Table 4.4 show that most respondents were at university level (42.1%), followed by college holders (35.6%). The educational backgrounds of the respondents in the study varied, with 11.4% at the secondary level, 7.9% at the postgraduate level, and 3.0% at the primary school level. These findings align with those of a previous study conducted by Hassan and Hoque (2021), indicating that a significant portion of SACCO members in Narok County possess a solid educational foundation. This educational background equips them with the knowledge and understanding required to navigate the intricacies of SACCOs and make well-informed decisions regarding savings, investments, and other financial matters which was vital in helping this study come up with more reliable and applicable results to households of different educational levels (Banthia, & Dey,2022).

Notably, these results stand in contrast to those reported by Field (2018), suggesting divergent findings in the context of member education within SACCOs.

4.3.4 Length of service

The data on the respondents' education was analyzed, and the results are presented in Table 4.5.

Table 4.5: Length of Membership in the SACCO in Years

Years	Frequency	Percentage %
1-5	41	20.3
6-10	126	62.4
11-15	8	4.0
Above 15	27	13.4
Total	**202**	**100.0**

Source: (Field Data, 2023)

The results presented in Table 4.5 reveal that a significant portion (62.4%) of respondents had been SACCO members for 6 to 10 years, indicating a considerable level of tenure within the organization. This was followed by 20.3% of respondents who had a membership duration of 1 to 5 years. A smaller percentage, 13.4%, reported a membership exceeding 15 years, while only 4.0% fell within the 11 to 15-year range. These findings suggest that the majority of SACCO members in Narok County have maintained longstanding relationships with their respective SACCOs, providing a robust foundation for assessing the impact of financial literacy on household income generation. This duration of membership ensures that the research data gathered is reliable and applicable,

as respondents' experiences and insights are based on substantial involvement with the SACCOs. Notably, these findings align with the observations made by Ngaruko and Ntiranyura (2021), contrasting with the findings of Goyal and Kumar (2021).

4.4 Diagnostic Test Results

The results of the tests were presented as follows:

4.4.1 Normality test

The study employed the Kolmogorov-Smirnov test given the substantial sample size (N) exceeding 100 participants Boedec (2016). The results are presented in Table 4.6.

Table 4.6: Tests of Normality

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Saving Literacy	.140	202	.052	.916	202	.051
Investment literacy	.139	202	.051	.914	202	.051
Fintech literacy	.081	202	.053	.970	202	.054
Risk literacy	.194	202	.062	.874	202	.059
Household income	.141	202	.057	.942	202	.055

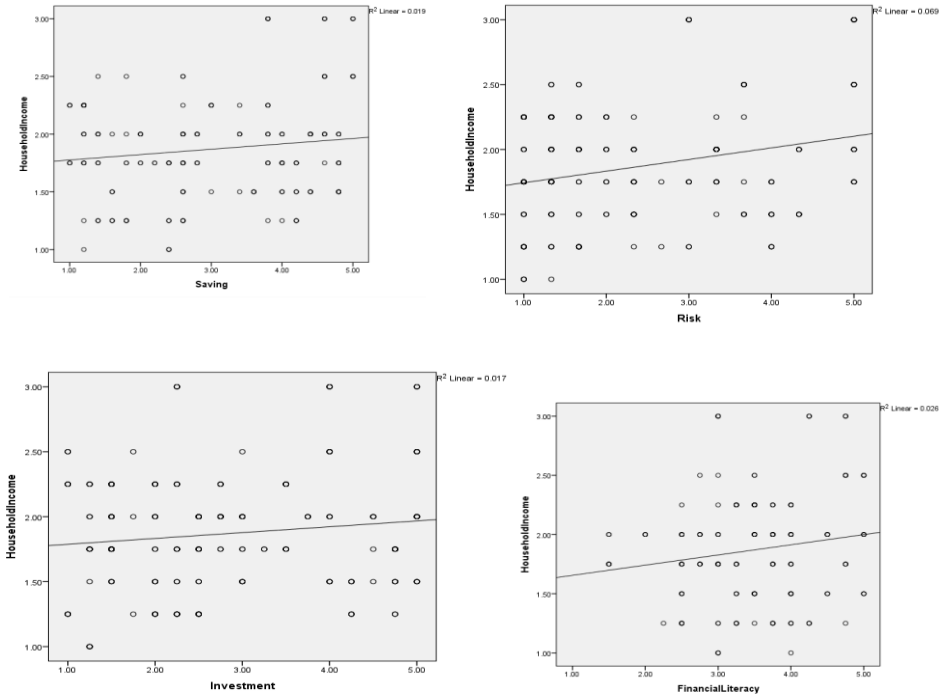
Source (Field Data, 2023)

The results in Table 4.6 show that the p-values for all variables are more significant than 0.05. This indicates insufficient evidence to reject the null hypothesis, which suggests that the data follows a normal distribution (Akinyele, 2017). Therefore, with a 95% confidence level, the data representing all the variables in the study are typically distributed. Consequently, Pearson's correlation and linear regression models can be utilized to investigate the study objectives, as the normality assumption is satisfied.

4.4.2 Linearity test

Scatter plots were used to test for linearity, and the results are shown in Figure 4.1

Figure 4.1 Scatter plots for linearity



Source (Field Data, 2023)

The results in Figure 4.1 reveal a positive linear correlation between the independent and dependent variables, as evidenced by the fitted lines in the scatter plots. This observation aligns with previous research conducted by Amugune (2018), emphasizing that scatter plots confirm linearity through observable variations of data points around the regression line. However, these findings diverge from those of Othiambo (2019), whose research yielded contradictory results.

4.4.3 Autocorrelation test

The presence of autocorrelation was checked using the Durbin-Watson test (Abdulhafedh, 2017). The findings, and the results are presented in Table 4.7.

Table 4.7 Autocorrelation Results

Model Summary		
Model	**Std. Error of the Estimate**	**Durbin-Watson**
1	0.42206	2.025

a. Predictors: (Constant), Saving Literacy, Investment Literacy, Financial Literacy, Risk Literacy

b. Dependent Variable: Household Income

Source: (Field Data, 2023)

The findings presented in Table 4.7 provide reassurance regarding the absence of autocorrelation, with the Durbin-Watson statistic registering at 2.025, well within the recommended threshold range of 1.5 to 2.5 (Abdulhafedh, 2017). These results are consistent with the research conducted by Magoma et al. (2022), who similarly observed no evidence of autocorrelation in their study. However, they contradict the findings of Goyal et al. (2021), who reported significant autocorrelation in their research.

4.5 Role of Saving Literacy on Household Income Generation Among SACCO Members in Narok County, Kenya

The study's first objective sought to establish the role of saving literacy on household income generation among SACCO members in Narok County. The respondents' responses were measured on a five-point Likert scale where; 1-Strongly Disagree, 2-Disagree, 3-Undecided, 4-Agree, 5- Strongly Agree (Darteh,2018).

4.5.1 Descriptive Tests

Descriptive statistics were analyzed, and results were presented in Table 4.8.

Table 4.8: Descriptive Statistics for Saving Literacy

Given statements	SD	D	U	A	SA	Total	M	Sd
I have a clear plan for how much I want to save and why	64 (32%)	75 (37%)	38 (19%)	15 (7%)	10 (5%)	202 100%	4.03	1.45
I save regularly to achieve my financial goals	75 (37%)	60 (30%)	50 (25%)	12 (6%)	5 (2%)	202 100%	4.01	1.27
I have the discipline to stick to my saving plan	73 (36%)	80 (40%)	23 (11%)	16 (8%)	10 (5%)	202 100%	2.75	1.47
I am aware of the different saving products available	64 (32%)	73 (36%)	50 (25%)	5 (2%)	10 (5%)	202 100%	2.96	1.40
I understand the value of saving	50 (25%)	100 (50%)	30 (14%)	12 (6%)	10 (5%)	202 100%	3.20	1.54

Source (Field Data,2023).

Key: SD=Strongly Disagree; D=Disagree; UN=Undecided; A=Agree; SA=Strongly agree, M=Mean, Sd=standard deviation.

The findings in Table 4.8, based on responses from a total of 202 respondents, reveal various attitudes toward saving literacy. When asked about having a clear saving plan and clear reasons for saving, 64 (32%) respondents strongly disagreed, 75 (37%) disagreed, 38 38(19%) were undecided, 15 (7%) agreed, and 10 (5%) strongly agreed with the statement resulting to a mean of 4.03 and a standard deviation of 1.45. This indicates that most members of SACCOs in Narok County were unsure or preferred not to disclose whether they have a comprehensible detailed saving plan. This may also suggest that they do not have saving literacy or preferred to keep the information confidential. These findings are

consistent with research by Anderson et al. (2020) and Bhardwaj and Saha (2022), which underscored the importance of having a well-defined saving plan in fostering consistent saving practices and achieving financial objectives. Furthermore, they align with the principles of the lifecycle hypothesis, which posits that household saving decisions are influenced by factors such as income level, saving literacy, and individual heterogeneity (Modigliani & Blumberg, 1954). However, these results diverge from those of Smith and Jones (2022), who identified a negative relationship between having a savings plan and the amount of savings accumulated, suggesting a need for further investigation in future studies into the underlying factors influencing saving behavior among SACCO members.

Similarly, when asked about saving regularly to achieve their financial goals, 75 (37%) of the respondents strongly disagreed, 60 (30%) disagreed, 50 (25%) were undecided, only 12 (6%) agreed, and 5 (2%) strongly agreed with this statement resulting to a mean of 4.01, and a standard deviation of 1.27. These results suggest a clear lack of regular saving habits among the respondents, indicating a potential gap in their understanding of the importance of saving for achieving financial goals. These observations are reinforced by studies conducted by Smith et al. (2021) and Tung and Vuong (2022), which underscored the positive impact of consistent saving habits on overall income and financial stability. Furthermore, they align with the principles of the lifecycle hypothesis, emphasizing the influence of factors such as income level, saving literacy, and individual characteristics on saving decisions (Modigliani & Blumberg, 1954). However, these results contrast with those of Silva (2021), whose findings suggested that regular saving did not significantly enhance participants' income, implying a need for further exploration in future studies into the complexities of saving behavior.

Regarding the discipline to stick to a saving plan, 73 (36%) of the respondents strongly disagreed, 80 (40%) disagreed, 23 (11%) were undecided, 16 (8%) agreed, and 10 (5%) strongly agreed with the statement resulting to a mean of 2.75 and a standard deviation of 1.47. These finding suggests a lack of discipline and commitment the SACCO members to follow through with their intended saving plans, which undermines their efforts to maintain consistent saving behavior and hinders their progress toward achieving their financial goals. These observations are consistent with research conducted by Johnson (2022) and Kapito et al. (2020), highlighting that individuals who adhere consistently to their saving plans and demonstrate strong saving discipline are more likely to experience significant increases in overall income and financial security. Furthermore, they align with the principles of the lifecycle hypothesis, emphasizing the influence of factors such as income level, saving literacy, and individual characteristics on saving decisions (Modigliani & Blumberg, 1954). However, these results differ from those of Gomila (2021), who found that having saving discipline did not positively influence the amount of income one accumulated, suggesting a need for further investigation into the nuances of saving behavior and its impact on income.

Regarding awareness of different saving products, 64 (32%) of respondents strongly disagreed, 73 (36%) disagreed, 50 (25%) were undecided, while 5 (2%) agreed, and 10 (5%) strongly agreed, resulting in a mean of 2.96 and a standard deviation of 1.40. These findings indicate that a significant number of respondents were unaware of various saving options and products that could effectively help them manage and grow their savings. This lack of awareness restricts their ability to make informed decisions when selecting suitable saving products aligned with their financial goals, thereby limiting their savings potential

and highlighting the necessity for education to maximize their incomes. These observations are supported by studies conducted by Smith et al. (2021) and Kapito et al. (2020), which demonstrated that individuals knowledgeable about saving options and products made better-informed decisions, leading to more effective management and increased income generation. Additionally, these findings align with the principles of the lifecycle hypothesis, which emphasize the influence of factors such as income level, saving literacy, and individual characteristics on saving decisions (Modigliani & Blumberg, 1954). However, they contradict the results of Smith and Jones (2022), who found that awareness of saving products did not positively influence participants' income, suggesting a need for further exploration into the relationship between saving awareness and income.

Regarding understanding the value of saving, 50 (25%) of respondents strongly disagreed, 100 (50%) disagreed, 30 (14%) were undecided, while only 12 (6%) agreed, and 10 (5%) strongly agreed, resulting in a mean of 3.20 and a standard deviation of 1.54. These results signify a clear lack of awareness or appreciation of the importance and benefits of saving. This deficiency in understanding may undermine their motivation to engage in effective saving practices and hinder long-term financial well-being, underscoring the necessity for saving literacy. These findings are corroborated by studies by Johnson (2022) and Bambara (2016), which demonstrated that individuals with a deeper understanding of the value of saving were more likely to set specific financial goals, establish emergency funds, and make strategic investment decisions. Furthermore, these results align with the principles of the lifecycle hypothesis, which emphasize the influence of factors such as income level, saving literacy, and individual characteristics on saving decisions (Modigliani & Blumberg, 1954). They highlight the significant role of saving literacy in shaping

individuals' financial behaviors and outcomes. Conversely, these results contradict those of Ibrahim (2021), who found no positive and significant relationship between understanding the value of saving and the amount of income one accumulated, suggesting a need for further investigation into the nuanced relationship between saving understanding and income accumulation.

4.5.2 Correlation Tests

The data was subjected to further analysis using Pearson's Correlation to establish whether there was a relationship between saving literacy and household income generation of SACCO members in Narok County (Kipai, 2022). The results are presented in Table 4.9.

Table 4.9: Pearson's Correlation Analysis between Saving Literacy and Household Income Generation

		Household income
Saving Literacy	Pearson Correlation	.736**
	Sig. (2-tailed)	.034
	N	202

Source (Field Data,2023)

* Correlation is significant at the 0.05 level (2-tailed).

The results in Table 4.9 reveal a strong positive and statistically significant correlation (r=0.736, p =0.034) between saving literacy and household income generation among SACCO members in Narok County. This implies that saving literacy plays a crucial role in enhancing household income generation within this demographic. These findings are consistent with research by Brounen et al. (2016) who similarly found a positive and

significant correlation between saving literacy and household income among SACCO members in the United States of America. Moreover, these observations align with the principles of the lifecycle hypothesis, highlighting the influence of factors such as income level, saving literacy, and individual characteristics on saving decisions (Modigliani & Blumberg, 1954). However, these results contradict those of Smith and Jones (2022), who identified a weak negative and statistically significant correlation between saving literacy and household income, suggesting a need for further examination into the relationship between saving literacy and income generation in future studies.

4.5.3 Regression Tests

The study further sought to establish the role of saving literacy on household income generation among SACCO members in Narok County. To achieve this, the study tested the first null hypothesis, which stated:

H_{o1}: *Saving literacy has no significant role in household income generation among SACCO members in Narok County, Kenya.*

This analysis was done using simple linear regression, and the results are presented in Table. 4.10.

Table 4.10: Regression Coefficients for Saving Literacy

R^2	β	F	t	*p*
.542	.46	238.068	3.286	0.034

Source (Field data, 2023)

Table 4.10 shows the goodness of fit for the regression between saving literacy and household income generation in SACCO members in Narok County was satisfactory. An R^2 of 0.542 indicates that 54.2% of the household income generation of SACCO members is explained by saving literacy. Saving literacy significantly affects the household income generation of SACCO members in Narok County, according to the F- value of 238.068 and $p< 0.05$. The beta coefficient (β) of the regression analysis was positive, indicating a positive relationship between saving literacy and household income generation. Specifically, a beta coefficient (β) of .46 means that for each unit increase in saving literacy, household income generation increases by .46 units. The null hypothesis that Saving literacy has no significant role in household income generation among SACCO members in Narok County, Kenya, was rejected by a t value of 3.286, more significant than the critical t value and a P value less than 0.05. The study concluded that Saving literacy was an essential factor influencing household income generation in SACCO members. These finding are consistent with Tung and Vuong (2022) and Barbara (2016), who found that saving literacy significantly increases household income generation. Furthermore, these results align with the principles of the lifecycle hypothesis, emphasizing the influence of factors such as income level, saving literacy, and individual characteristics on saving decisions (Modigliani & Blumberg, 1954). However, they differ from those of Lusardi and Tufano (2017), who concluded that saving literacy did not increase household income, indicating a need for further exploration into the relationship between saving literacy and income generation.

4.6. Role of Investment Literacy on Household Income Generation Among SACCO Members in Narok County

The study's second objective sought to establish the role of investment literacy on household income generation among SACCO members in Narok County. The respondents were required to show their level of agreement or disagreement with statements given on investment literacy on a five-point Likert scale, with 1-Strongly Disagree, 2Disagree, 3-Undecided, 4-Agree, 5- Strongly Agree.

4.6.1 Descriptive Tests

Descriptive statistics were analyzed, and results are presented in Table 4.11

Table 4.11: Descriptive Statistics for Investment Literacy

Statement	SD	D	U	A	SA	Total	M	Sd
I am comfortable using numbers to make financial decisions	59 (29%)	61 (30%)	51 (26%)	20 (10%)	11 (5%)	202 100%	2.86	1.35
I am familiar with various investment vehicles	45 (22%)	70 (35%)	41 (20%)	20 (10%)	26 (13%)	202 100%	2.82	1.25
I understand how interest compounds over time	59 (29%)	51 (25%)	45 (23%)	24 (12%)	23 (11%)	202 100%	2.81	1.63
I understand how inflation can role the real value of my investments.	50 (25%)	53 (26%)	57 (28%)	22 (11%)	20 (10%)	202 100%	2.74	1.46

Source (Field Data, 2023)

Key: SD=Strongly Disagree; D=Disagree; UN=Undecided; A=Agree; SA=Strongly agree, M=Mean, Sd=Standard deviation

The results in Table 4.11 reveal that 59 (29%) of SACCO members strongly disagreed, 61 (30%) disagreed, 51 (26%) were undecided, 20 (10%) agreed, and 11 (5%) strongly agreed with the statement "I am comfortable using numbers to make financial decisions," resulting in a mean of 2.86 and a standard deviation of 1.35. These findings indicate that a majority of the respondents expressed discomfort when it comes to utilizing numbers for investment decision-making. This underscores a significant gap in investment literacy among SACCO members in Narok County, as the ability to effectively use numbers is crucial for making informed financial decisions that can contribute to increased income generation (Kim,2021). The findings align with studies by Perales et al. (2021) and Hastuti et al. (2021), which found a positive correlation between individuals' ability to use numbers effectively and their capacity to make sound investment choices. Additionally, these results are further supported by the behavioral finance theory, which posits that emotions, biases, and cognitive heuristics influence financial decision-making, leading to deviations from rationality (Amos & Daniel, 1970). However, they contradict those by Bwalya et al. (2022), who found a negative correlation between individuals' ability to use numbers effectively and their capacity to make sound investment choices, suggesting a need for further investigation into the relationship between investment literacy and financial decision-making.

On whether they were familiar with various investment vehicles such as stocks and bonds, 45 (22%) of the SACCO members strongly disagreed, 70 (35%) disagreed, 41 (20%) were undecided, 20 (10%) agreed, and 26 (13%) strongly agreed with the statement, resulting in a mean of 2.82 and a standard deviation of 1.25. These results indicate that the majority of SACCO members were not well-versed with various investment vehicles, potentially

lacking a full understanding of the potential benefits and risks associated with them. This aligns with research by Lusardi and Mitchell (2017) and Tchamyou (2020), which suggests that knowing various investment options enables individuals to make informed choices and capitalize on potential investment opportunities, thereby increasing their income generation. Additionally, these results are further supported by the behavioral finance theory, which posits that emotions, biases, and cognitive heuristics influence financial decision-making, leading to deviations from rationality (Amos & Daniel, 1970). However, they differ from those of a study by Bwalya et al. (2022), indicating a need for further exploration into the factors influencing familiarity with investment vehicles among SACCO members.

The study also examined the respondents' understanding of how interest accumulates over time and its influence on the value of investments. The results showed that 59 (29%) of the respondents strongly disagreed, 51 (25%) disagreed, 45 (22%) were undecided, 24 (12%) agreed, and 23 (11%) strongly agreed with the statement, resulting in a mean of 2.81 and a standard deviation of 1.63. These results indicate that a significant number of the SACCO members in Narok County have limited knowledge about how interest accumulation works and its impact on the value of investments. The findings are consistent with studies by Parales et al. (2021), who found that individuals who comprehend the impact of interest on the value of their investments were able to optimize their income generation from their investments. As well, these results are further supported by the propositions of behavioral finance theory, which posits that emotions, biases, and cognitive heuristics influence financial decision-making, leading to deviations from rationality (Amos & Daniel, 1970). This highlights the importance of understanding the dynamics of interest accumulation and

its implications for investment value. However, the results differ from those of Grossman and Stiglitz (2021), indicating a need for further investigation into the factors influencing understanding of interest accumulation among SACCO members.

On how inflation can affect the actual value of investments, 50 (25%) of the SACCO members strongly disagreed, 53 (26%) disagreed, 57 (28%) were undecided, 22 (11%) agreed, and 20 (10%) strongly agreed with the statement, resulting in a mean of 2.74 and a standard deviation of 1.46. These findings indicate that a significant portion of SACCO members lack a clear understanding of how inflation can affect the actual value of investments. This is consistent with research by Tchamyou et al. (2020), which suggests that individuals who understand the impact of inflation on the actual value of investments are better equipped to make investment decisions that can counter the eroding effects of inflation, ultimately leading to higher income generation. Furthermore, these results are further supported by the propositions of behavioral finance theory, which posits that emotions, biases, and cognitive heuristics influence financial decision-making, leading to deviations from rationality (Amos & Daniel, 1970). However, the results differ from those of Bwalya et al. (2022), indicating a need for further exploration into the factors influencing understanding of inflation's impact among SACCO members.

4.6.2 Correlation Tests

The data was subjected to further analysis using Pearson’s Correlation to establish whether there was a relationship between investment literacy and household income generation of SACCO members in Narok County. The results are presented in Table 4.10.

Table 4.12: Pearson's Correlation Analysis between Investment Literacy and Household Income Generation

		Household income
Investment Literacy	Pearson Correlation	.829**
	Sig. (2-tailed)	.022
	N	202

Source, (Field Data, 2023)

*. Correlation is significant at the 0.05 level (2-tailed).

The results in Table 4.12 reveal a strong positive and statistically significant correlation (r=0.829, p =0.022) between investment literacy and household income generation of SACCO members in Narok County, indicating the necessity of investment literacy for enhanced household income generation. These findings align with Habyarimana and Kakkar's (2022) research, which also found a positive and significant relationship between investment literacy and household income generation. Moreover, these results are consistent with the propositions of behavioral finance theory, which suggest that emotions, biases, and cognitive heuristics influence financial decision-making, leading to deviations from rationality (Amos & Daniel, 1970). However, the findings differ from those by Daniel and Hirsh (2021), suggesting a need for further investigation into the factors influencing investment literacy's impact on household income generation.

4.6.3 Regression Tests

The study further sought to establish the role of investment literacy on household income generation among SACCO members in Narok County. To achieve this, the study tested the second null hypothesis, which stated:

H_{o2}: *Investment literacy has no significant role in household income generation among SACCO members in Narok County, Kenya.*

This analysis was done using simple linear regression, and the results are presented in Table. 4.13

Table 4.13: Regression Coefficients for Investment Literacy

R^2	β	F	t	*p*
.687	.255	438.996	2.056	0.022

Source (Field Data,2023).

Table 4.13 shows that the goodness of fit for the regression between investment literacy and household income generation in SACCO members in Narok County was satisfactory. AnR^2 of 0.687 indicates that 68.7% of the household income generation of SACCO members is explained by investment literacy. Investment literacy significantly affects the household income generation of SACCO members in Narok County, according to the F-value of 438.996 and $p< 0.05$. The beta coefficient (β) of the regression analysis was positive, indicating a positive relationship between investment literacy and household income generation. Specifically, a beta coefficient (β) of .255 means that for each unit increase in investment literacy, household income generation increases by .255 units. The

null hypothesis that investment literacy has no significant role in household income generation among SACCO members in Narok County, Kenya, was rejected by a t-value of 2.056, more significant than the critical t value and a P value less than 0.05. The study concluded that investment literacy had a significant role in the household income generation of SACCO members in Narok County. This aligns with the findings of Habyarimana and Kakkar (2022), affirming the vital role of investment literacy in increasing household income generation. Similarly, Perales et al. (2021) found that households with higher investment literacy were more inclined to invest in higher-return investment products, further contributing to increased household income. These results resonate with the principles of behavioral finance theory, acknowledging the influence of emotions, biases, and cognitive heuristics on financial decision-making (Amos & Daniel, 1970). Nonetheless, these findings contrast with those of Bwalya et al. (2022), suggesting a need for deeper exploration into the relationship between investment literacy and household income generation.

4.7 The Role of Financial Technology Literacy on Household Income Generation Among SACCO Members in Narok County, Kenya

The third objective of the study sought to establish the role of financial technology literacy on household income generation among SACCO members in Narok County. The respondents were required to show their level of agreement or disagreement with statements given on financial technology literacy on a five-point Likert scale of 1-5, where 1-Strongly Disagree, 2-Disagree, 3-Undecided, 4-Agree, 5- Strongly Agree.

4.7.1 Descriptive Tests

Descriptive statistics were analyzed, and results were presented in Table 4.14.

Table 4.14: Descriptive Statistics for Financial Technology Literacy

Given statements	SD	D	U	A	SA	Total	M	Sd
I use digital platforms such as mobile banking	2 (1.0%)	18 (9%)	16 (8%)	83 (41%)	83 (41%)	202 100%	4.12	0.96
I have invested in financial products such as stocks, bonds	33 (16%)	57 (28%)	69 (34%)	27 (13%)	16 (8%)	202 100%	2.68	1.14
I have applied for a loan using digital lending platforms.	11 (5%)	30 (15%)	12 (6%)	47 (23%)	102 (51%)	202 100%	3.99	1.29
I use digital savings platforms to save my money.	64 32%	56 (28%)	35 (17%)	23 (11%)	24 (12%)	202 100%	2.13	1.10

Source (Field Data,2023)

Key: SA=Strongly Agree; A=Agree; UN=Undecided; D=Disagree; SD=Strongly Disagree, M=Mean, Sd=Standard deviation

The results in Table 4.14 show that 2 (1%) of the SACCO members strongly disagreed, 18 (9%) disagreed, 16 (8%) were undecided, 83 (41%) agreed, and 83 (41%) strongly agreed with the statement that they use digital platforms such as mobile banking to transfer money. The mean of the findings was 4.12 and the standard deviation was 0.96. These findings indicate that a majority of SACCO members in Narok County utilize digital platforms, such as mobile banking, for transferring money and probably understand the benefits associated with them. These findings are consistent with research by Kwagala and Munene (2022) and Liu et al. (2021), highlighting the convenience, speed, and efficiency of digital platforms in facilitating money transfers, thereby fostering income generation. Moreover, these results align with the Technology Acceptance Model (TAM), which emphasizes users' perceptions of technology value and ease of use in shaping their intention to adopt new technology (Davies,1989). However, they contradict the findings of Kim (2022), suggesting a need for further investigation into the reasons behind such disparities.

On whether they had invested in financial products such as stocks and bonds using digital platforms,33(16%) strongly disagreed,57(28%) disagreed 69(34%) were undecided,27(13%) agreed, and 16(8%) strongly agreed with the statement resulting to a mean of 2.68 and a standard deviation of 1.14. These findings indicate that many SACCO members are yet to tap into the potential of digital platforms for investing in financial products, which could boost their income generation. These findings resonate with a study by Asila (2016), underscoring the pivotal role of digital platforms in facilitating stock investments. As the research revealed, households proficient in utilizing these platforms could conveniently access investment opportunities, diversify portfolios, and consequently augment income streams. Additionally, these results align with the Technology Acceptance Model (TAM), which underscores users' perceptions of technology's value and ease of use in influencing their adoption decisions (Davies, 1989). However, they diverge from the findings of Adjei (2021), suggesting the need for further investigation into the factors contributing to such disparities.

Furthermore, when asked whether they had applied for a loan using a digital lending platform such as M-Shwari, 11 (5%) of the SACCO members strongly disagreed, 30 (15%) disagreed, 12 (6%) were undecided, 47 (23%) agreed, and 102 (51%) strongly agreed with the statement. This resulted in a mean of 3.99 and a standard deviation of 1.29.These results indicate that a significant majority of SACCO members primarily used digital platforms to access for loans. SACCOs should encourage their members to save money and seek loans through digital platforms, promoting financial stability and investment opportunities. Initiatives and education programs emphasizing saving can help members achieve their financial goals. These results resonate with Asila's (2016) study, highlighting the positive

impact of a balanced approach to digital lending platforms on households' financial well-being and sustainable income generation. Moreover, they align with the principles of the Technology Acceptance Model (TAM), emphasizing users' perceptions of technology's value and ease of use in influencing their adoption decisions for new technology (Davies, 1989). However, they diverge from the findings of Kim (2022), suggesting the need for deeper exploration into the factors driving such disparities.

Finally, regarding the use of digital platforms for saving, 64 (32%) of the SACCO members strongly disagreed, 56 (28%) disagreed, 35 (17%) were undecided, 23 (11%) agreed, and 24 (12%) strongly agreed with the statement. This resulted in a mean of 2.13 and a standard deviation of 1.10. These findings indicate that a significant portion of SACCO members do not utilize digital platforms for saving, suggesting a need for improved financial behavior. These results are consistent with a study by Pangestu and Karnadi (2020), which also observed limited adoption of digital platforms for saving purposes. The study underscored the importance of promoting digital saving options and educating individuals on the benefits and convenience of using digital platforms to enhance their saving habits, thereby fostering income generation. Additionally, these findings align with the Technology Acceptance Model (TAM), which emphasizes users' perceptions of technology's value and ease of use in influencing their decisions to adopt new technology (Davies, 1989). However, these findings contrast with those of Adjei (2021), suggesting the need for further investigation into the underlying factors driving this disparity in future studies.

4.7.2 Correlation Tests

In order to determine the relationship between financial technology literacy and household income generation, the data was subjected to additional analysis using Pearson's Correlation. Table 4.15 provides the findings.

Table 4.15: Pearson's Correlation Analysis between Financial Technology Literacy and Household Income Generation

		Household income
Financial technology literacy	Pearson Correlation	.860**
	Sig. (2-tailed)	.013
	N	202

Source (Field Data,2023)

* Correlation is significant at the 0.05 level (2-tailed).

Table 4.15 shows a strong positive correlation (r=0.860, p =0.013) between financial technology literacy and household income generation among SACCO members in Narok County. This indicates that fintech literacy enhances household income. These findings align with Pangestu and Karnadi (2020) but differ from Kim (2022), who found no significant relationship.

4.7.3 Regression Tests

The study further sought to establish the role of financial technology literacy on household income generation among SACCO members in Narok County. To achieve this, the study tested the third null hypothesis, which stated:

H_{o3}: *Financial technology literacy has no significant role in household income generation among SACCO members in Narok County, Kenya.*

This analysis was done using simple linear regression, and the results are presented in Table. 4.16

Table 4.16: Regression Coefficients for Financial Technology Literacy

R^2	β	F	t	*p*
.740	.386	569.235	2.797	0.013

Source (Field Data, 2023)

Table 4.16 shows that the goodness of fit for the regression between financial technology literacy and household income generation in SACCO members in Narok County was satisfactory. An R^2 of 0.740 indicates that 74% of the household income generation of SACCO members is explained by financial technology literacy. Financial technology literacy significantly affects the household income generation of SACCO members in Narok County, according to the F- value of 569.235 and $p< 0.05$. The beta coefficient (β) of the regression analysis was positive, indicating a positive relationship between fintech literacy and household income generation. Specifically, a beta coefficient (β) of .386 means that for each unit increase in fintech literacy, household income generation increases by .386 units. The null hypothesis that financial technology literacy has no significant role in household income generation among SACCO members in Narok County, Kenya, was rejected by a t value of 2.797, higher than the critical t value and a P value less than 0.05. The study concluded that financial technology literacy had a significant role on the household income generation of SACCO members in Narok County.

This aligns with Pangestu and Karnadi (2020) and Asila (2016), who found that financial technology literacy boosts household income. These findings support the Technology Acceptance Model (TAM), which highlights the importance of perceived value and ease

of use in technology adoption (Davies, 1989). However, Adjei (2021) found no significant link between fintech literacy and household income, indicating a need for further research into the factors behind this discrepancy.

4.8 The Role of Risk Literacy on Household Income Generation Among SACCO Members in Narok County, Kenya

The fourth objective of the study sought to find the role of risk literacy on household income generation among SACCO members in Narok County. The respondents were required to show their level of agreement or disagreement with statements given on risk literacy on a five-point Likert scale of 1-5.

4.8.1 Descriptive Tests

Descriptive statistics were analyzed, and results were presented in Table 4.17.

Table 4.17 Descriptive Results for Risk Literacy

Given Statements	SD	D	U	A	SA	Total	M	Sd
I am familiar with Risk terminologies	76 (38%)	45 (22%)	34 (17%)	29 (14%)	18 (9%)	202 100%	3.35	1.35
I evaluate investments potential risks	74 (36.6%)	55 (27.2%)	24 (11.9%)	31 (15.3%)	18 (8.9%)	202 100%	4.33	1.34
I effectively manage risks	69 (34.2%)	44 (21.8%)	37 (18.3%)	19 (9.4%)	33 (16.3%)	202 100%	2.52	1.45

Source (Field Data, 2023)

Key: SD=Strongly Disagree; D=Disagree; UN=Undecided; A=Agree; SA=Strongly agree, M=Mean, Sd=Standard deviation

The results in Table 4.17 reveal that 76 (38%) of the SACCO members strongly disagreed, 45 (22%) disagreed, 34 (17%) were undecided, 29 (14%) agreed, and 18 (9%) strongly agreed with the statement regarding their familiarity with risk literacy terminologies. The mean for the data was 3.35, with a standard deviation of 1.35 which suggests a significant deficit in risk literacy, potentially impacting their ability to make informed decisions regarding risk management (Kim, 2021). These finding underscores the importance of enhancing risk literacy among SACCO members, as highlighted by Bakar et al. (2020), to empower them in navigating investment opportunities with confidence. Furthermore, these results align with the principles of the Capital Asset Pricing Model (CAPM), which portrays investors as rational and risk-averse individuals striving for wealth maximization (Sharpe et al.,1960). However, they contrast with the findings of Chang et al. (2018), indicating the need for further exploration into the factors contributing to this disparity.

Regarding their evaluation of potential risks in investments, 74 (36.6%) of the SACCO members strongly disagreed, 55 (27.2%) disagreed, 24 (11.9%) were undecided, 31 (15.3%) agreed, and 18 (8.9%) strongly agreed with the statement. This resulted in a mean of 4.33 and a standard deviation of 1.34. This indicates a significant deficiency in risk literacy among the members (Kim, 2021). These results corroborate previous research by Tariq et al. (2019) and Stojanovic et al. (2019), highlighting the importance of actively assessing risks in investments to effectively manage them and minimize potential losses, thereby enhancing income generation. Additionally, these findings are consistent with the principles of the Capital Asset Pricing Model (CAPM), which underscores the rational and risk-averse nature of investors seeking to maximize wealth (Sharpe et al., 1960). However,

they diverge from the findings of Goyal and Kumar (2021), suggesting the need for further investigation into the factors contributing to this discrepancy.

Finally, regarding whether they effectively manage risks in their investments, 69 (34.2%) strongly disagreed, 44 (21.8%) disagreed, 37 (18.3%) were undecided, 19 (9.4%) agreed, and 33 (16.3%) strongly agreed with the statement. This resulted in a mean of 2.52 and a standard deviation of 1.45. These results suggest that a significant number of SACCO members lack the skills to and ability to manage risks in their investments effectively. These results echo the sentiments of previous research by Stojanovic et al. (2019), highlighting the critical role of effective risk management in enhancing household income generation. Individuals equipped with the necessary skills and knowledge can make more informed investment decisions and mitigate potential losses. Moreover, these findings align with the fundamental principles of the Capital Asset Pricing Model (CAPM), which posits that investors are rational and prioritize risk avoidance in their pursuit of wealth maximization (Sharpe et al., 1960). However, they diverge from the findings of Chang (2018), suggesting the need for further exploration into the factors contributing to this discrepancy.

4.8.2 Correlation Tests

The data was subjected to further analysis using Pearson's Correlation to establish the relationship between risk literacy and household income generation among SACCO members in Narok County. The results are presented in Table 4.16.

Table 4.18: Pearson's Correlation Analysis between Risk Literacy and Household Income Generation

		Household income
Risk literacy	Pearson Correlation	.862**
	Sig. (2-tailed)	.001
	N	202

Source (Field Data,2023)

* Correlation is significant at the 0.05 level (2-tailed).

The results in Table 4.18 show a strong positive and statistically significant correlation (r=0.862, p =0.001) between risk literacy and household income generation of SACCO members in Narok County. This means risk literacy is necessary for enhanced household income generation among SACCO members in Narok County. This agrees with Habyarimana and Kakkar's (2022) findings, who found a positive and significant relationship between risk literacy and household income generation. Furthermore, these findings resonate with the core tenets of the Capital Asset Pricing Model (CAPM), emphasizing the rational behavior of investors and their inclination towards risk avoidance in wealth maximization (Sharpe et al., 1960). However, they contrast with the findings of Goyal and Kumar (2021), suggesting potential areas for further investigation into the dynamics of risk literacy and its impact on income generation.

4.8.3 Regression Tests

The study further sought to establish the role of risk literacy on household income generation among SACCO members in Narok County. To achieve this, the study tested the fourth null hypothesis, which stated:

H_{o4}: *Risk literacy has no significant role in household income generation among SACCO members in Narok County, Kenya.*

This analysis was done using simple linear regression, and the results are presented in Table 4.19

Table 4.19: Regression Coefficients for Risk Literacy

R^2	β	F	t	*p*
.743	.090	587.242	3.843	0.001

Source (Field Data,2023).

Table 4.19 shows that the goodness of fit for the regression between risk literacy and household income generation in SACCO members in Narok County was satisfactory. An R^2 of 0.743 indicates that 74.3% of the household income generation of SACCO members is explained by risk literacy. Risk literacy significantly affects the household income generation of SACCO members in Narok County, according to the F- value of 587.242 and $p< 0.05$. The beta coefficient (β) of the regression analysis was positive, indicating a positive relationship between risk literacy and household income generation. Specifically, a beta coefficient (β) of .090 means that for each unit increase in investment literacy, household income generation increases by .090 units. The null hypothesis that risk literacy has no significant role in household income generation among SACCO members in Narok

County, Kenya, was rejected by a t value of 3.843, higher than the critical t value, and a P value of less than 0.05. The study concluded that risk literacy had a significant role on the household income generation of SACCO members in Narok County. This agrees with Abreu and Mendes (2020) that risk literacy is vital in increasing household income generation. Moreover, they align with the fundamental principles of the Capital Asset Pricing Model (CAPM), emphasizing investors' rational behavior and their prioritization of risk management in wealth accumulation (Sharpe et al., 1960). However, they diverge from the findings of Chang (2018), suggesting potential nuances in the relationship between risk literacy and income generation that warrant further exploration.

4.9 Household Income Generation

The study's dependent variable was the household income generation of the SACCO members in Narok County. The respondents were required to show their level of income category by ticking their income category from the scale provided, which ranges from 1-5 where:1=0-50,000ksh,2=50,001-100,000ks,3=100,001-150,000ksh,4=150,000-200,000ksh, 5=Over 200,000ksh.

4.9.1 Descriptive Tests

Descriptive statistics were analyzed, and results were presented in Table 4.18.

Table 4.20 Income Categories of Respondents

Income Range (Ksh)	Frequency	Percent%
0-50,000ksh	46	22.8%
50,001-100,000ksh	126	62.4%
100,001-150,000ksh	11	5.4%
150,001-200,000ksh	13	6.4%
Over 200,000ksh	6	3.0%
Total	**202**	**100.0%**

Source (Field Data,2023)

The results in Table 4.20 show that majority of the SACCO members 126(62.4%), earned between 50,001-100,000 Kenyan shillings, 46(22.8%) earned between 0-50,000kenyan shillings,13(6.4%) earned between 150,001-200,000kenyan shillings,11(5.4%) earned between 100,001-150,000kenyan shillings and 6(3.0%) earned over 200,000kenyan shillings. These findings highlight the diverse income distribution among the SACCO members, with a concentration in the 50,001-100,000 Kenyan shilling income range. Understanding the income distribution within the SACCO is crucial for tailoring financial products, services, and investment strategies to meet members ' specific needs and goals across different income categories. These findings align with a study by Mugo (2016) that found that income categories provided valuable information for the SACCOs to design targeted financial education programs, savings plans, and investment opportunities that align with its members' financial capabilities and aspirations. However, the findings differ from those of Goyal and Kumar (2021).

4.9.2 Multiple Linear Regression Tests

The study further sought to establish the overall effect of all four independent variables (Saving literacy, investment literacy, financial technology literacy, and risk literacy) on the dependent variable (Household income generation). This analysis was done using multiple linear regression, and the results are presented in Table 4.21.

Table 4.21: Multiple Linear Regression Model Summary

R	R^2	Std. Error of the Estimate
.8218	.678	.3358

Source (Field Data, 2023).

Table 4.21 shows that the goodness of fit for the regression between all the independent variables (saving, investment, financial technology, and risk literacy) and household income generation of SACCO members in Narok County was satisfactory. An R^2 of 0.678 indicates that the four independent variables combined explain 67.8% of the household income generation of SACCO members in Narok County. These findings agree with Abrau and Mendes (2020) and Habyarimana and Kakkar (2022) who noted that with a high level of financial literacy, there is a great extent of improvement in household income generation of SACCO members. On the contrary, these findings differ from those by Kim (2022).

4.9.3 Overall Model Significant Test

Moreover, the study aimed to determine the significance of the overall model. To achieve this, an ANOVA test for the overall model was rigorously conducted, and the comprehensive results are presented in Table 4.22.

Table 4.22: ANOVA for the Overall Model

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	22.333	1	22.176	458.385	.0018[b]
Residual	9.5825	200	.048		
Total	**31.92**	**201**			

Source (Field Data, 2023)

The results in Table 4.22 indicate that the overall model was significant, i.e., the independent variables jointly were suitable explanatory variables for Household income generation of SACCO members in Narok County (F=458.385, P value = 0.018).

4.9.4 Deriving Regression Equation for the Model

To derive the regression equation for the model, a model summary was meticulously crafted, incorporating crucial parameters in line with established methodology (Amiri, Mottahedi, & Asadi, 2015). The comprehensive results of this endeavor are thoughtfully presented in Table 4.23.

Table 4.23: Model Summary and Parameter Estimates

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.674	.254		2.996	.018
Predictor Variables					
Saving literacy	.46	.075	.346	2.056	.034
Investment Literacy	.255	.078	.271	3.286	.022
Financial Technology Literacy	.386	.138	.164	2.797	.013
Risk Literacy	.090	.023	.572	3.843	.001

Source (Field Data,2023)

From Table 4.23, the model regression equation 4.1 was established.

$Y = 1.674 + 0.46X_1 + 0.255X_2 + 0.386X_3 + 0.090X_4$ ……...4.1

From the regression equation 4.1, it is established that by holding all independent variables (Saving literacy, investment literacy, financial technology literacy, and risk literacy) constant, the household income generation of SACCO members in Narok County will be 1.674 units. The regression equation 4.1 also shows a positive significant relationship between saving literacy and household income generation of SACCO members in Narok County; this is supported by a coefficient of 0.46 (p-value=0.034). This shows that a unit increase in saving literacy would lead to a 0.46 improvement in household income generation. A positive and significant relationship exists between investment literacy and household income generation of SACCO members in Narok County, as shown by a

coefficient of 0.255 (p-value=0.022). This indicates that a unit increase in investment literacy would lead to a 0.255 increase in household income generation.

Further, the findings indicate a positive significant relationship between financial technology literacy and household income generation of SACCO members in Narok County, as shown by a coefficient of 0.386 (p-value = 0.013). This indicates that a unit increase in financial technology literacy would lead to a 0.386 improvement in household income generation. The findings further show a positive significant relationship between risk literacy and household income generation of SACCO members in Narok County, as shown by a coefficient of 0.090 (p-value = 0.001). This indicates that a unit increase in risk literacy would lead to a 0.090 increase in household income generation. This infers that financial technology literacy influences the household income generation of SACCO members in Narok County, followed by investment, saving, and risk literacy. These findings are consistent with Lusardi and Mitchel (2017) and Hasan and Hogue (2021), who noted that a high level of financial literacy increases household income generation among SACCO members. However, they differ from those (Kim,2022), who found no impact of financial literacy on household income generation.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study's findings in light of the specific study objectives. In addition, it provides the study conclusion, recommendations, and potential areas for further study.

5.2 Summary of Findings

The study aimed to determine the role of financial literacy on household income generation among SACCO members in Narok County. Specifically, the study tested the following null hypothesis;

H_{01}: Saving literacy has no significant role in household income generation among SACCO members in Narok County, Kenya.

H_{02}: Investment literacy had no significant role in household income generation among SACCO members in Narok County, Kenya.

H_{03}: Financial technology literacy had no significant role in household income generation among SACCO members in Narok County, Kenya.

H_{04}: Risk literacy had no significant role in household income generation among SACCO members in Narok County, Kenya.

Further the study employed descriptive and inferential statistics to draw inferences and make generalizations. The study adopted a descriptive survey design. Stratified random sampling and purposive sampling were used to achieve the desired representation of

various categories of SACCO members in Narok County. The sample size was 202 respondents from SACCOs in Narok County. The study tested the following hypotheses;

5.2.1 Saving Literacy on Household Income Generation

The study's first objective sought to establish the role of saving literacy in household income generation among SACCO members in Narok County. The null hypothesis tested was stated as follows H_{01}: Saving literacy has no significant role in household income generation among SACCO members in Narok County, Kenya.

The results showed that most respondents disagreed with the statement that helped conceptualize the influence of saving literacy on household income generation. The study established that having a savings plan enables individuals to save to achieve their financial goals, having a saving discipline enables them to stick to their saving plan, and being aware of the different saving products enables them to optimize the benefits of their savings. This showed that saving literacy enhanced household income creation. The results further show that saving literacy influenced the income generation of SACCO members in Narok County. Hence, the null hypothesis that saving literacy has no significant role in the household income generation of SACCO members in Narok County was rejected. This shows that saving literacy was critical in influencing SACCO members' household income generation.

5.2.2 Investment Literacy on Household Income Generation

The study's second objective delved into assessing the impact of investment literacy on household income generation among SACCO members in Narok County. The null hypothesis tested was stated as follows, H_{02}: Investment literacy had no significant role in household income generation among SACCO members in Narok County, Kenya.

Respondents were tasked with providing their perspectives on statements related to numeracy, investment vehicles, interest compounding, and inflation—statements designed to gauge their level of investment literacy and its influence on household income. A significant majority of respondents expressed their disagreement concerning their comfort in using numerical data for investment decisions, their familiarity with various investment instruments such as stocks and bonds, their comprehension of how interest accumulates over time and its impact on investment value, and their understanding of how inflation can affect the actual worth of their investments. Subsequent in-depth analysis, utilizing Pearson's correlation and simple linear regression, unveiled a substantial and positive correlation between investment literacy and household income generation. This underscores that despite respondents' relatively lower levels of investment literacy, they perceived it as a crucial factor in enhancing their income generation. Consequently, the null hypothesis, positing that investment literacy had no significant role in household income generation among SACCO members in Narok County, was resoundingly rejected. These findings illuminate the pivotal role of investment literacy in shaping the income-generating capacity of SACCO members.

5.2.3 Financial Technology Literacy on Household Income Generation

The third objective of the study sought to establish the role of financial technology literacy on household income generation among members of SACCOs in Narok County. The null hypothesis tested was stated as follows; H_{03}: Financial technology literacy had no significant role in household income generation among SACCO members in Narok County, Kenya. The respondents replied to various statements that defined the role of financial technology literacy on the household income generation of SACCO members in

Narok County. The results showed that most respondents agreed that financial technology literacy played a crucial role in their household income generation; however, their level of financial technology literacy on investing in stocks using digital platforms was wanting. This showed a general perception that financial technology literacy influenced the SACCO member's income. The correlation analysis and simple linear regression analysis showed that the role of financial technology literacy on household income generation was not by chance. Hence, the null hypothesis that financial technology literacy has no significant role in household income generation among members of SACCOS in Narok County was rejected. This indicates that financial technology literacy enhances income generation among SACCO members in Kenya.

5.2.4 Risk Literacy on Household Income Generation

The study's fourth goal was to determine the role of risk literacy on household income generation among SACCO members in Narok County. The null hypothesis tested was stated as follows; H_{04}: Risk literacy had no significant role in household income generation among SACCO members in Narok County, Kenya. The respondents were asked to express how much they agreed or disagreed with the comments made regarding risk literacy. The majority of respondents agreed that understanding, evaluating, and managing risks enables one to optimize the value of their investments, increasing their income generation. However, the risk literacy among the SACCO members in Narok County was wanting.

Pearson's correlation analysis revealed a statistically significant positive link between risk literacy and household income generation of the SACCO members. The findings also showed that risk literacy played a vital role in the household income generation of the SACCO members; thus, the null hypothesis that risk literacy has no significant role in the

household income generation of SACCO members in Narok County was rejected. This indicates that risk literacy plays a crucial role in household income generation.

5.3 Conclusions

In view of the study findings, the following conclusions were drawn along the research objectives. First, the study concluded that saving literacy positively influenced income generation among SACCO members in Narok County. These findings were supported by several past studies in both the global, African and local contexts as well the savings hypothesis theory. This therefore justified that saving literacy is necessary for increased household income generation. However, it's worth noting that Saving literacy among a significant percentage of the SACCO members in Narok county was wanting, and therefore saving literacy should be enhanced for effective household income generation among SACCO members. Secondly, the study concludes that investment literacy positively affects household income generation among SACCO members in Narok County. These findings are supported by several past studies in both the global, African and local contexts as well the behavioral finance theory as discussed in chapter four. This therefore justified that investment literacy is necessary for increased household income generation. However, investment literacy among most SACCO members was not up the required standards as discussed by the global studies, therefore, investment literacy should be enhanced for practical household income generation. Thirdly, the study concluded that financial technology literacy influences household income generation among SACCO members. These findings are supported by several past studies in both the global, African and local contexts as well the technology acceptance model as discussed in chapter four. This therefore justified that financial technology literacy is necessary for increased household

income generation. Financial technology literacy should therefore be enhanced for effective household income generation among SACCO members. Lastly, the study concluded that risk literacy influences household income generation. These findings are supported by several past studies in both the global, African and local contexts as well the capital asset pricing model as discussed in chapter four. This therefore justifies that risk literacy is necessary for increased household income generation. Though the results indicate that a more significant number of the SACCO members lacked risk literacy, risk literacy should be enhanced for adequate household income generation.

5.4 Recommendations

In view of the conclusions, the study recommends that SACCOs should prioritize initiatives to improve saving literacy among members through financial education programs, workshops, and resources to address the inadequate levels of financial literacy observed in this study, which affects the applicability of the findings in other regions and sectors. Additionally, they should strengthen investment literacy by organizing workshops, distributing educational materials, and facilitating access to resources on investment vehicles and the impact of inflation on the actual value of investments, which could mitigate the low levels of investment knowledge identified in this research and enhance the relevance of the results to other regions. Further, SACCOs should invest in financial technology literacy programs by providing training and online tutorials, and partnering with financial technology providers to maximize the potential of digital tools. Moreover, prioritizing risk literacy education is recommended through risk management workshops, case studies, and educational materials to help members understand and manage investment risks effectively. Finally, SACCOs should collaborate with educational

institutions, financial institutions, and government agencies to implement comprehensive financial literacy programs. Implementing these recommendations will equip SACCO members with vital financial literacy, enhancing household income generation and, in the long run, promoting the country's economic growth.

5.5 Areas for Further Research

This study suggests various promising avenues for future research. First, researchers can expand their investigations by incorporating additional variables like financial behavior and knowledge, offering a nuanced understanding of how financial habits influence income generation. Diversifying target populations, including bank employees and self-help group members, provides sector-specific insights into the impact of financial literacy across diverse occupational contexts.

Second, cross-country comparisons offer a valuable lens for comprehending global financial literacy dynamics, revealing regional nuances in the relationship between financial literacy and income generation. Furthermore, longitudinal studies can illuminate the enduring effects of financial literacy programs, and qualitative research methods can provide depth to our understanding of the behavioral aspects of financial literacy. Additionally, assessing the impact of policy interventions on income generation holds practical significance, and investigating digital financial literacy in developing economies is timely and relevant.

Lastly, conducting industry-specific studies within regions uncovers dynamics that affect financial well-being across various sectors. These research avenues enrich our comprehension of the multifaceted relationships between financial literacy, income

generation, and socioeconomic factors, benefiting policymakers, educators, and individuals striving for financial well-being.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

INTRODUCTION

Please read the questions carefully and feel free to respond to them by giving your response by ticking (√) whichever option best describes you or applies to you. This questionnaire consists of six major sections (sections A to F). The information given here will only be used for academic purposes and treated with the utmost confidentiality. Your cooperation will be highly appreciated.

To the best of your ability, kindly answer all the questions enlisted here.

SECTION A: DEMOGRAPHICS

1. Kindly indicate your gender

   Male [ ] Female [ ]

2. Kindly indicate your age bracket

   25 years and below [ ] 26-30 years [ ] 31-35 years [ ] Above 50 years [ ]

   36-40 years [ ] 40-45 years [ ] 46-50 years [ ]

3. Highest level of education

   Primary level [ ] Secondary level [ ] Postgraduate level [ ]

   College level [ ] University level [ ]

4. How long have you been a member of this SACCO?

   1- 5 years [ ] 6- 10 years [ ]

   11- 15 [ ] Above 15 years [ ]

SECTION B: SAVING LITERACY

5. Use the following scale to show your level of agreement with the statements:

1-Strongly Disagree (SD) 2-Disagree (D) 3-Undecided (U) 4-Agree (A) 5-Strongly Agree (SA)

Statements	1	2	3	4	5
I have a clear plan for how much I want to save and why					
I save regularly to achieve my financial goals, such as buying a house or starting a business.					
I have the discipline to stick to my saving plan and not spend my savings on unnecessary items.					
I am aware of the different saving products available and how they can help me achieve my financial goals					
I understand the value of saving and how it can help me achieve financial stability and security					

SECTION C: INVESTMENT LITERACY

6. Use the following scale to show your level of agreement with the statements:

1-Strongly Disagree (SD) 2-Disagree (D) 3-Undecided (U) 4-Agree (A) 5-Strongly Agree (SA)

Statements	1	2	3	4	5
I am comfortable using numbers to make financial decisions					
I am familiar with various investment vehicles like stocks, bonds, mutual funds, and ETFs, and I have invested in several of them to increase my income.					
I understand how interest compounds over time and how it can significantly role the value of my investments					
I understand how inflation can role the real value of my investments					

SECTION D: FINANCIAL TECHNOLOGY LITERACY

7. Use the following scale to show your level of agreement with the statements:

1-Strongly Disagree (SD) 2-Disagree (D) 3-Undecided (U) 4-Agree (A) 5-Strongly Agree (SA)

Statements	1	2	3	4	5
I use digital platforms such as mobile banking, online banking, and electronic wallets to transfer money.					
I have invested in financial products such as stocks, bonds, or mutual funds using digital investment platforms.					
I have applied for a loan using digital lending platforms.					
I use digital savings platforms to save my money.					

SECTION E: RISK LITERACY

8. Use the following scale to show your level of agreement with the statements:

1-Strongly Disagree (SD) 2-Disagree (D) 3-Undecided (U) 4-Agree (A) 5-Strongly Agree (SA)

Statements	1	2	3	4	5
"I use Risk literacy information systems, enterprise Risk literacy software, and project management tools to manage risks in my income generation activities."					
"I effectively manage risks in my income generation activities by developing Risk literacy plans, regularly reviewing strategies, and improving processes."					
"I am familiar with Risk literacy terminologies such as Risk literacy strategies and risk assessments					

SECTION F: HOUSEHOLD INCOME GENERATION

9. Which income category do you fall into (Total income from all your sources per month)?

   0-50,000 Ksh [ ] 50,001- 100,000 Ksh [ ] 0ver 200,000 Ksh [ ]
   100,001-150,000 Ksh [ ] 150,001-200,000 Ksh [ ]

10. How much of your income is from investments?

    100% [ ] 75% [ ] 0% [ ]
    50% [ ] 25% [ ]

11. How often does this amount vary?

    Not at all [ ] Sometimes [ ] I don't know [ ]
    All times [ ] Am not sure [ ]

12. In the last five years since you joined this SACCO, to what extend has your income increased?

    By 100% [ ] By 75% [ ] By 0% [ ]

    By 50% [ ] By 25% [ ]

APPENDIX II: LIST OF SACCOSs IN NAROK COUNTY, KENYA

Members Categories

No	SACCO Name	Registered	Active Members	With loans
1.	Agricultural Co-operative SACCO	230	200	90
2.	Cosmopolitan SACCO	220	150	80
3.	Good Hope SACCO	200	150	80
4.	Imarisha SACCO	200	150	100
5.	Maasai Mara University SACCO	651	580	492
6.	Narok Boda Boda SACCO	620	400	210
7.	Narok Eagles SACCO	310	200	160
8.	Narok Fleet transport SACCO	150	120	70
9.	Narok Golden Chance SACCO	430	320	200
10.	Narok Star SACCO	180	150	80
11.	Ollin SACCO	280	200	100
12.	Platinum credit SACCO	150	130	60
13.	Puan SACCO	240	180	70
14.	Yamuna SACCO	160	120	60
	Total	**4021**	**3050**	**1852**

Source (Narok Registrar of Cooperatives, 2023)

APPENDIX III RESEARCH BUDGET

	Activity	Item	Cost (Ksh)
1.	Proposal writing	Typing, photocopying, printing, binding, travel, and website visits.	50,000
2.	Travel expenses	Traveling and accommodation during data collection/ analysis	90,000
3.	Publication	The publication fee for the final project	60,000
Total			**200,000**

APPENDIX V: INTRODUCTORY LETTER FROM THE UNIVERSITY

Maasai Mara University

BOARD OF POSTGRADUATE STUDIES

OFFICE OF THE DIRECTOR

P.O. BOX 861 – 20500
Narok, Kenya www.mmarau.ac.ke

Tel: +254 – 20 -2066042
+254 – 20 - 8081874

20th April, 2023

RESEARCH PERMITS SECTION
NACOSTI
UTALII HOUSE

REF: JOHN WAMBUA MUTUA (REG. NO. BM07/JP/13532/2021

We wish to confirm that the above named is a bona fide Masters student at Maasai Mara University pursuing Master of Business Administration in the School of Business and Economics. His proposed research is '***Role of Financial Literacy on Household Income Generation Among SACCO Members in Narok County, Kenya***". He would like to apply for a research permit from NACOSTI before she can proceed for field work and data collection.

We further confirm that the candidate has adhered to all research protocol requirements of Maasai Mara University and the proposed research has been rated as having no known adverse impacts on the environment and does not pose any ethical concerns.

This is therefore to request your office to issue him with a research permit.

MAASAI MARA UNIVERSITY
P.O Box 861 - 20500
NAROK
20 APR 2023

Prof. Romanus Abila, PhD
Director, Board of Postgraduate Studies
abila@mmarau.ac.ke, https://orcid.org/0000-0001-8762-7153

APPENDIX VI: RESEARCH PERMIT FROM NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **801574**

Date of Issue: **01/May/2023**

RESEARCH LICENSE

This is to Certify that Mr.. john wambua mutua of Maasai Mara University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Narok on the topic: ROLE OF FINANCIAL LITERACY ON HOUSEHOLD INCOME GENERATION AMONG SACCO MEMBERS IN NAROK COUNTY, KENYA for the period ending : 01/May/2024.

License No: **NACOSTI/P/23/25673**

801574

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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See overleaf for conditions