EFFECTS OF SMALL-SCALE FARMERS' PERCEPTION OF FINANCIAL LITERACY ON FINANCIAL CAPITAL INVESTMENT IN SOY SUB- LOCATION-KAKAMEGA COUNTY

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the proposal itself.

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ABSTRACT

Smallholder farmers play a vital role in food security and economic development, yet their ability to make informed financial capital investment decisions remains limited due to varying levels of financial literacy. This study examined the effects of smallholder farmers' perception of financial literacy on financial capital investment in Soy Sub-location, Kakamega County. Guided by the Push-Pull Theory and the Theory of Planned Behavior, and anchored in a pragmatic research philosophy, the study explored how perceptions of interest rate fluctuations, investment risk diversification, and inflation influenced investment decisions. A descriptive correlational research design was employed, utilizing both structured questionnaires and interview guides to collect data from 331 randomly selected smallholder farmers. The findings indicated that the perception of investment risk diversification had a significant positive effect on financial capital investment, suggesting that farmers who understood and applied diversification principles were more likely to allocate their resources effectively. The perception of interest rate fluctuations also had a significant positive effect, though its influence was comparatively lower, reflecting limited responsiveness to interest rate changes. In contrast, the perception of inflation had a significant negative effect, meaning that anticipated or actual inflation discouraged farmers from committing long-term financial investments. Correlation analysis confirmed significant positive relationships between the financial literacy components and financial capital investment. Multiple linear regression results showed that a substantial proportion of the variation in financial capital investment was explained by the independent variables. The study concluded that financial literacy perception significantly influenced financial capital investment decisions, with investment risk diversification playing the most impactful role. The study recommended the strengthening of financial literacy training programs, expanding access to financial advisory services, and promoting collaboration between financial institutions and agricultural cooperatives to support well-informed investment decisions. Future research could assess the long-term impact of financial literacy interventions on the economic resilience and investment behavior of smallholder farmers.

Key words: Financial literacy, smallholder farmers, investment risk diversification, interest rates, inflation, financial capital investment, Kakamega County.

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LIST OF ABBREVIATIONS

KNBS	Kenya National Bureau of Statistics
GDP	Gross Domestic Product
DFID	Department for International Development
OECD	Organization for Economic Cooperation and Development
SDG	Sustainable Development Goals

DEFINITION OF TERMS

Financial capital- Financial resources or fund used by people to finance a firm, contributing to an individual's wealth including both equity and borrowed funds (Lipsey, 1993)

Financial literacy- Knowledge and understanding of financial concepts, risk and skills (Lusardi, 2019).

Livelihood- A means to life, it is a greater extension to work, income or occupation (Chen & Phakdeephirot, 2021).

CHAPTER ONE

INTRODUCTION

1.1 Background of study

Small-scale farmers play a crucial role in agricultural production and food security in today's global economy, yet they are faced with challenges relating to intricacies of making sound financial decisions that include savings, investment or credit acquisition. According to a study conducted in Laos, financial literacy is positively associated with financial savings (Morgan & Long, 2020). In some Sub-Saharan countries in Africa, many rural dwellers are most likely financially illiterate except for those who seek financial education programs. This is according to a study by (Twumasi, Jiang & Adhikari, 2021). Studies have indicated that agriculture is an important sector of rural economic development, yet it is a high asset but low-income activity with low return on investment (Khanal & Omobitan, 2020). This could be a dilemma that many smallholder farmers may be struggling with. A study conducted in Trans Nzoia County depicted that financial literacy on savings, investment and debt management influence the use of financial practices (Wafula, 2017). This study endeavored to determine how the independent variables of smallholder farmers' perception of financial literacy specific concepts such as perception of interest rate fluctuation, perception of inflation rate fluctuation as well as perception of risk diversification influenced the dependent variable through their timely, correct and sustainable financial capital investment decisions. The dependent variable, financial capital investment, was studied to establish how small scale farmers perception of concepts of financial literacy influenced capital investment towards better income, According to a study by Cooper, Gimeo and Woo (1994, as cited in Yadav, 2023) financial capital creates a buffer against shocks and allows for ability to pursue better income. Most of past studies have dealt with the objective financial literacy. This study sought to understand not only if the small scale farmers' objective financial literacy influenced financial decisions and positively impact their financial capital investment, but also whether the subjective perception of financial literacy affected the same financial capital investment decision.

1.1.1 Financial capital investment among small scale farmers

Among farmers financial capital is the farm produce converted into cash used for household expenses and savings for challenging times (Mumuni & Oladele, 2016). According to a study by Cooper, Gimeo and Woo (1994, as cited in Yadav, 2023)) financial capital creates a buffer

against shocks and allows for ability to pursue better income strategies which ultimately contribute to the countries' GDP and sustainable economic development. The study by Yadav 2023 indicates that financial capital is essential in any entrepreneurial advancement that could be achieved through effective savings and efficient investment strategies. Most studies have focused on environmental fragility with a keen bias on climate change and unsustainable development of humanity, which focuses on poverty levels. This study focused on the effect of farmers' knowledge of certain concepts in financial literacy on the savings and investment of financial capital of smallholder farmers which is affected by information that one has and how they put the same information to effective use

1.1.2 Effects of small scale farmers' perception of financial literacy on financial capital investment.

The Organization of Economic Co-operation and Development (OECD) defines financial literacy as not only knowledge and understanding of financial concepts and risk but also the skills, motivation and confidence to apply such knowledge to make effective decision, to improve financial well-being of individual and society in participating in economic life (Lusardi, 2019). Studies show that farmers' livelihood strategies in Western Kenya include households who acquire land and employ diversified agricultural and livestock activities to cope with changing times, other households sell labour and land in trying to cope with changing external drivers hence remaining in poverty trap (Mukalama, 2015). Financial literacy is a major indicator that helps an individual make more informed, efficient decisions regarding monetary and financial management in their lives hence better living standards. Financial literacy contains basic components of finance including among others saving, borrowings, personal budgeting, economic issues and financial concepts.

This study sought to identify the smallholder farmers' knowledge and uptake of financial literacy and its effect on their financial capital savings and investment. The study sought to determine its effect on the farmer's financial behavior and its ultimate effect on the livelihood of smallholder farmers in Soy sub-location- Kakamega County. The study endeavored establish the farmers' understanding on the major basic components of financial literacy that touch on their economic issue, financial concepts and financial capital investing. This study sought to establish how the farmers' knowledge and perception of these concepts directly impacts their financial behavior and their livelihood in the long run.

Smallholder farmers fall in a very vital category in the economy as far as their contribution to the country's GDP per capita and total employment is concerned. Small and micro enterprises include small scale farm enterprises who contribute largely to economic development in developing, emerging and developed economies. This is as per the study on effect of financial knowledge on small scale farm enterprises by (Ayuya, 2018). Enterprises require financial services which are accessed through decision making that are based on certainty, risk, and uncertainty that may need mitigation.

Access to financial services by small-scale farmers can help mitigate risks and minimize exposure to uncertainties hence help small-holder farmer households meet financial need as indicated by (Pomeroy, 2020). Studies show that many farmers are and have been informed about financial products and services with keen bias on savings and borrowing in relation to farm productivity. There is more impact when the perception of something is positive, to this effect this study endeavored to study the smallholder farmers' perception of the financial literacy and knowledge that is accessible to them and its effect on their decision on financial capital investment.

Farmers largely have knowledge on savings and borrowing this study aimed at knowing the smallholder farmers' perception of this knowledge, ability, confidence and motivation to make decisions on uncertainties that could arise due to other financial and economic uncertainties such as fluctuation of the interest rates and changes in currency values. Studies have been done in understanding diversity of current state and past trajectories in household livelihoods and agro ecosystems in relation to adaptation of agricultural innovation Livelihood strategy diversification such as crop and livestock diversification and how it impacts on improving the farmers' livelihood in western Kenya as stated in a study on Improving rural livelihoods as a ''moving target'' (Mukalama, 2015). This study focused on studying the farmers' perception of financial literacy's input on the farmers' financial capital investment beyond farm productivity and food security.

1.1.3 Effects of farmer's financial literacy perception on risk diversification.

Studies have shown that perceived financial literacy is more related to financial choices than objective literacy, in essence better financial behavior could arise from willingness to apply knowledge not just acquire it (Balasubramnian & Sargent, 2020). Recent studies have shown that increased household savings enabled farmers to adopt better farming technologies which in turn increased their yield and margin (Gikonyo, 2022). There have been many studies

depicting intensified need for financial inclusion among smallholder farmers in Sub Saharan Africa majorly in Kenya, this is in a bid to enable farmers access financial services and products while increasing productivity (Owuor, 2021). In this study the focus was to establish whether the farmers' exposure to better investment in farming technologies toward better yield is coupled with knowledge on financial literacy aspects such as risk diversification and investment measurement during fluctuating economic times and the level of impact on the farmers' livelihood and welfare in the long run. This study focused on determining whether and to what extent the smallholder farmer who is empowered to access services and products perceive being financially literate and how that influences their financial capital investment decisions.

1.1.4 Farmers' financial Literacy perception on inflation rate fluctuation.

According to a study conducted in the United States of America, agricultural input prices rise during inflationary periods hence causing farmers to pay a higher price than they receive, Snell (2022). A study conducted in Nigeria revealed the inflation's growth rate attributed to rising commodity prices impacted negatively on farmer's income and investment (Akpaeti, Agom, & Frank 2018). Rising commodity prices could discourage consumers and investors alike.

This study aimed at ascertaining how the small-scale farmers can perceive the impact of inflation on their financial capital regarding savings and investment and or the effect of interest rate fluctuation on their savings and investment choices. The study sought to determine how the small-scale farmers have access to financial services and products and their perception in regard to how they are able to make informed financial decisions in regard to fluctuations in aspect such as inflation rate, interest rate and diversification of risks. This also helped make inferences on the impact of financial literacy on the small-scale farmers' venture and ultimately their livelihood.

1.1.5 Farmers financial literacy perception on interest rate fluctuation

Small scale farmers' perception of risk affects their management strategies that lead to their ultimate investment decisions and productivity this is according to a study conducted in India (Raj, Thomas, Thomas, & Rakhesh4, 2023). According to a comprehensive conceptual framework on financial literacy, basic knowledge in matters such as time value for money, inflation, interest, savings and investment gives a perception and opinion of a person's financial decision (Firli, 2017).

1.2 Problem Statement

In many developing economies such as Kenya, small-scale farmers play a critical role in rural livelihoods and national food security. From the statistics by Kenya National Bureau of statistic 2019, Soy Sub-location, located in Kakamega County is largely made up of smallholder farmers who rely on agriculture for income and sustenance. Despite their central role in agricultural production, many of these farmers face systemic challenges, including limited access to financial education, credit facilities, market information as well as follow through of their investment decisions. Studies show that farmers' livelihood strategies in Western Kenya are households who acquire land, employ diversified agricultural and livestock activities to cope with changing times, other households sell labour and land in trying to cope with changing external drivers hence remaining in poverty trap (Mukalama, 2015).There have been various studies about financial literacy among small scale farm enterprises, which entail common objective financial knowledge about the savings culture, having access to financial services and products (Owuor, 2021). Most of these studies, however, have majorly focused on the objective effect of financial literacy on the small-scale farmers' enterprise performance in terms of savings and margins improvement such as is in the case of a study by (Ayuya & Cherotich 2019). There is need to establish whether the smallholder farmer's subjective perception of financial literacy goes beyond having access to financial services and a savings culture into understanding the perception of the widely spread financial knowledge and financial inclusion in relation to utilizing the financial knowledge for decisions towards financial capital investment in their farming venture and livelihood sustainability.

Financial concepts such as interest rates, inflation rates and return on investment which fluctuate periodically, especially in emerging economies, which significantly impacts price level (Ikenna et al., 2023). The effect of inflationary fluctuation influences agricultural performance by impacting on the cost of production which relates to the return on investment. Studies have shown that the relationship between financial literacy and savings behavior have been moderated by self-control this is according to (Mpaata, Koske & Saina, 2021), there is need to have a clear link to the impact of small-scale farmers understanding and perception of financial concepts such as interest rate and inflation rate fluctuation on their capital investment not just on their yield and savings.

There is a need for smallholder farmers to have the skill, motivation and confidence to apply financial and economic concepts in making financial decisions. A few authors in Sub Sahara Africa have handled the study on financial inclusion as well as financial literacy majorly

focusing on improving productivity and food security (Nyanzu, 2022) which is the second United Nations' Sustainable Development Goal (SGD 2). However, there is need to consider other components of financial literacy on the holistic living standards and economic wellbeing of the farmer. Studies have concentrated on knowing how farmers can be adaptive to the prevailing climate change (Chepkoecha, 2019). The crusaders of the United Nations' Development Goals Sustainable Development Goals (SDG) 2030 mainly link famers to SDG

2 hence a focus on farmers majorly deal with food security. Financial literacy is an indispensable aspect because it contributes to financial inclusion, fosters adoption of Fin Tech and facilitates achievement of the SDGs (Treu, 2024). Smallholder farmers' understanding and perception of financial literacy concepts such as interest rate and inflation rate fluctuation as well as its effects on their financial capital investment could probably help achieve other SGDs such as SDG 1(End Poverty), SDG 3(Good health and Well-being) as well as SDG 4(Quality education).

1.3 Research Objectives.

1.3.1 General Objectives

To establish the effects of smallholder farmers' financial literacy perception on investment of their financial capital in Soy sub-location, Kakamega County.

1.3.2 Specific objectives

i) To assess the effects of smallholder farmers' perception of financial literacy on interest rate fluctuation on financial capital investment in Soy sub-location- Kakamega county
ii) To determine the effects of small-holder farmer's perception of financial literacy about investment risk diversification on financial capital investment in Soy sub-location- Kakamega county
iii) To examine the effects of smallholder farmers' perception of financial literacy on current and future inflation rates on financial capital investment in Soy sub-location- Kakamega county

1.4 Research Questions.

The study will answer the following questions:

i) What is the effect of smallholder farmers' perception of financial literacy of interest rate on investment patterns on their financial capital investment?

ii) What is the smallholder farmers' perception of financial literacy on diversifying investment risk in relation to their financial capital investment?
iii) What is the smallholder farmers' perception of financial literacy of the effects of current and future inflation rate on their financial capital savings and investment?

1.5 Scope of the study.

When executing the study we concentrated in Soy sub-location, Kakamega County as we analyzed the farming practices and performance of the smallholder famers during their yielding and cropping periods and analyzed the farmers' perception of financial literacy on selected financial and economic concept namely interest rate fluctuation, inflation rate fluctuation and investment risk diversification in relation to farmers' financial capital that would reflected in their savings and investment decisions. The study investigated aspects around farmers' demographics, farm size, farming experience in line with the cost of farm input, expected yield and actual output, profitability and financial behavior to gauge a trend or consistency.

The study then analyzed the farmers' behavioral tendencies in connection to financial knowledge and financial capital savings and investment. In so doing then it was possible to make inferences on the association between the farmers' perception of financial literacy and its effect on their financial capital investment.

The study focused on seeking to assess the relationship between the farmer's perception of certain financial literacy concepts and the effect it has on their ability to make informed financial decisions regarding investing their financial capital. As of 2019 Kenya National Bureau of statistics data the population of smallholder farmers in Soy sub-location was estimated to be 1,925. Using the Yamane formula for sample size determination a representative sample of approximately 331 farmers was selected and assessed through their farmers' cooperative societies and support groups, this was conducted between November and December 2024. This study is based on The Theory of planned behavior (Ajzen, 1991) which is suitable in examining the effects of small scale farmers' financial literacy perception on their financial capital investment.

1.6 Significance of the study

The study's outcome and discussions are expected to be beneficial to the following:

1.6.1 Policy makers and regulators

Government agencies and policy makers will benefit from the study by getting to initiate and implement intervention needed to enact laws and policies that foster development. They will be able to formulate and develop programs that enhance smallholder farmers' skill development and that focus on but not limited to financial management etiquette and famers' uptake of financial knowledge. They will be able to put in place and relook into government's legal and regulatory framework to enhance smallholder farmer's capacity building towards sustainable venture with a focus on improving individual farmer's livelihood improvement through appropriate financial capital investment. A clear understanding of how subsistence farmers circumvent threats and opportunities to survive will give a basis for government to create a conducive environment smallholder farmer at both county and national level to attain financial literacy and financial capital investment hence economic growth.

1.6.2 Smallholder Farmers

Small-holder farmers will be able to use the findings and information on effective dynamic and innovative ways and seeking knowledge geared towards financial literacy hence make better investment, savings and financial behavior decisions that would guarantee their financial growth and development hence better living standards. The study identified factors affecting smallholder farmers' uptake of financial knowledge and application of this knowledge which farmers use to oversee a turnaround of their farming practices based on their financial decision focused on innovation and production hence improved living standards and fostering economic development.

1.6.3 Academicians and researchers

The study has provided valuable knowledge regarding sustainable agriculture by providing secondary data for researchers. It has expanded knowledge of farmers' financial literacy by providing an in-depth understanding on how financial literacy perception can lead to improved financial decisions, hence better living standards among smallholder farmers, hence enhancing economic growth and development.

From the discussions in this study scholars will be able to build on the theoretical aspect of smallholder farmers' financial sustainability in relation to their financial literacy perception and its impact of financial decisions translated to their living standards when multi-sectoral synergies are involved hence forming a foundation for further research gap. The findings have provided a basis for the theory build-up by outlining how they are implemented in smallholder

farmer's innovative farming. Its contribution is to enhance theory and extension of existing theory in this field accords development finance students and scholars' new knowledge and insight on multisector synergies for smallholder farmers.

1.6.4 Chapter Summary

This chapter introduced the critical role that small-scale farmers play in global agricultural production and food security, while highlighting the financial decision-making challenges they commonly face. It established the connection between small scale farmers' perception of financial literacy, its influence on financial behaviors such as saving as well as effects of their perception towards investment decisions. Citing studies from Laos, Sub-Saharan Africa, and Trans Nzoia County, the chapter outlined the widespread issue of limited financial literacy among rural populations, particularly smallholder farmers, and the implications of this on their economic well-being.

The core focus of the study was defined to examine how smallholder farmers' perceptions of key financial literacy concepts interest rate fluctuation, inflation rate fluctuation, and risk diversification influence small scale farmers' financial capital investment decisions. By investigating both the objective and subjective aspects of small scale farmers' financial literacy, the study aimed to provide deeper insights into how these perceptions affect sustainable and income-enhancing financial practices, behaviors and decisions among small-scale farmers

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review tackled previous studies done on farmers' financial literacy and financial capital investment, exploring use of theories such as theory of planned behavior and the Push-Pull theory. The Push-pull theory gave insights into how the smallholder farmer's knowledge influences their financial decision. The theory of planned behavior will provide insights into small-holder farmers' decision to choose specific financial investments.

The theoretical review will seek to find out how the gaps identified in previous studies can be filled with this study. This study aimed at enhancing smallholder farmers' financial literacy and investment of financial capital leading to informed decisions of financial capital investment and contributing to local and regional economic development as per the first 4 United Nation's 2030 Sustainable Development Goals (SDGs) and the World Development Indicators. This study put in place a supplementary theoretical probing into this topic and added on to the wealth of knowledge.

The empirical review was examination past literature of studies on the smallholder farmers ' perception of financial literacy in regard to having the necessary knowledge that would enable them to make decision on money as well as being able to meet their financial or economical obligations at a given time, as well as ascertain whether the smallholder farmers' financial literacy perception enabled them to attain the desired financial decision leading to a desired way of life, wealth, comfort and material good within a certain socio- economic standard.

Many researchers have pursued farmers' financial literacy at different levels with varied approaches. The empirical review section in this study established from literature of past studies the need for additional factors to understanding smallholder farmers' financial literacy perception and decision made by smallholder farmers in relation to financial capital investment.

2.2 Theoretical review

In order to capture the multidimensional aspect of farmers' decision making, this study adopted a multiple theory approach hence integrating the Push-pull theory and the Theory of planned behavior. This was to explain how attitude, perceived behavior, and literacy influence financial

capital investment decision among smallholder farmers. A single theory would not adequately explain the aspects of financial literacy, perception and financial investment behavior.

2.2.1 Push-Pull Theory

This theory was proposed by Lee (1966) highlighting the motivating factors on an individual's influence to pursue an opportunity. Studies conducted in the United Arab Emirate on the Push-Pull theory among entrepreneurs indicated that education, skill and training are important factors that influence growth and success (Matroushi, Al-Hosani, Al-Zaabi, & Al-Mansoori, 2020). The study depicts that the model had some limitation of not including other factors and not being based on other specific sectors in the economy. Smallholder farmers' knowledge, if well perceived by the farmers through training, skill or education could influence their financial decision in one way or the other.

The Push-pull theory is characterized by a thrusting force that pushes away from a condition and a pulling force towards a condition as is the case of a study conducted in China on farmers' willingness to quit their homestead for the city (Gong & Lin, 2019), the study indicates that farmers who moved to the city were influenced by the need for more income while those who chose to remain in the farm did so due to the need for a sense of belonging and attachment. The push factors have a negative connotation while pull factors are more prevalent to drawing individuals towards an opportunity (Kirkwood, 2009). Whereas the Push-Pull theory offers motivational drivers behind an individual's choice it has some limitations such as being over simplistic by simplifying complex decision making process in human beings, the human decision making process is influenced by a number of factors that the theory fails to recognize. The theory also fails to account for sector-specific context hence making it less effective for understanding nuanced decision making among small scale farmers. The Push-Pull categories have evolved over time; however, the Push-Pull theory was relevant to this study by explaining what influences some farmers to make certain financial decisions due to specific push influenced by the perception of the knowledge that they have. The theory is relevant in helping explain why small scale farmers may be motivated to adopt or avoid a specific financial behavior and decision. The theory gave insights to the study's dependent variable of financial capital investment by pointing out the behavioral patterns and decision making among small scale farmers.

2.2.2 Theory of Planned Behavior

This theory was proposed by Ajzen (1980), it states that the intentions to perform behaviors of different kinds can be predicted from the attitude towards the behavior, subjective norms and perceived behavioral control (Ajzen, 1991). The sufficiency of the theory is provided by inclusion of past behaviors in the prediction equation.

Disincentive arising from low return investment decisions among farmers in Northern Ireland to have short-term land rental prompted farmers to take up long-term land leasing, a decision that may have been influenced by the farmers behavioral and psychological factors (Adenuga, Jack, & McCarry, 2024). A farmer's behavioral factors would determine their decision on what and how to take up an investment. Subjective norms perceived behavioral control and attitude affect behavioral intention and actual behavior in the long run McBride, Carter, & Phillips, (2020). This theory informed and explored the smallholder farmer's behavior regarding financial capital investment and informed the conclusion of their financial literacy uptake, perception and application.

Smallholder farmers' entrepreneurial behavior has contributed to improved farm performance and farmer investment enforced by socio-economic factors (Konté, Ayuya, & Gathungu, 2019), in essence the farmer's entrepreneurial behavior would dictate the approach that a farmer takes in relation to their financial decisions such as capital investment.

Studies have indicated that attitudes toward behavior, subjective norms, perceived behavioral control and risk propensity have an impact on the behavioral investment intentions of an investor (Sobaih & Elshaer, 2023). A small-holder farmer's investment intentions would be impacted by their attitudes and subjective norms within their reach. While the Theory of planned behavior offers a robust framework for predicting an individual's specific behavior, particularly where rational decision-making is involved, it has several limitations such as its assumption of rationality in an individual's behavior, small scale farmers' decisions may be influenced by other factors such as fear, misinformation or habits. The theory is limited by it neglecting certain structural factors in external constraint such as policies barriers and market volatility. The theory however, gave insights to small scale farmers' perception of variables such as inflation rate fluctuation, interest rate fluctuation and risk diversification

2.3 Empirical Review

2.3.1 Inflation rate literacy and the financial capital investment by smallholder farmers

Studies have shown that households with high inflation literacy tend to have more realistic short and long run inflation expectations, to this end making them more careful in assessment of future macroeconomic developments, this is according to a study conducted by (Rumler & Valderrama 2020). Expectations may influence the perception of an individual or household when it comes to decision making, the study by Valderram is also depicted in the findings of a study by Siklos. According to a study done at household level in South Africa, it was revealed that there is an inverse relationship between the respondent's literacy and inflation expectation (Reid, Siklos, & Plessis, 2021).

Studies have shown that fostering investment promotes economic growth by encouraging efficient utilization of productive resources, the study established that inflation levels below a certain threshold had a positive influence on agricultural growth as well as economic growth (Aye & Odhiambo, 2021), the study did not establish the specific inflation level that has a positive impact on agricultural growth, which may be an essential part to smallholder farmers' endeavor in their financial decision. A study conducted in Ghana about the impact of inflation on domestic investment indicated that permanent inflation uncertainty had a negative effect on domestic investment, whereas transitionary inflation uncertainty did impact negatively on domestic investment (Kamasa, et al., 2022). This study in Ghana unlike the study by Aye and Odhiambo did not specify the type of domestic investment that was affected by inflation. The study in Soy sub-location focused specifically on the effect of the farmers' perception of financial literacy on inflation rate and its effect on their financial capital investment. According to Global Findex most poor and less educated households carry out financial transactions using costly and less safe ways hence unable to watch their savings and investment grow (Klapper, Lusardi & Oudheusden, 2019). The study by Lursadi however, did not clearly categorize the levels of education and poverty of households under study.

The study conducted in Soy sub location sought to establish the Soy sub-location smallholder farmer's perception of current and future inflation and if they can make relevant adjustments on their savings and investment as a component of their financial capital. We sought to assess the Soy sub-location smallholder farmers' perception of current and future inflation, hence their decisions concerning possible future macroeconomic changes and developments.

2.3.2 Interest Rate and the smallholder farmers' financial capital investment.

Interest rates determine the lending capacity and behavior of banks and Microfinance Institutions. In many African countries interest rate fluctuations have had an impact on agricultural productivity because banks have become reluctant in lending to the agricultural sector (Maloba, 2019). This may have a bearing on the smallholder famers' financial capital investment probably due to their perception on the same.

A study done by (Amanulla et al., 2020) indicates that small-scale farmers use credit facilities for survival whereas large scale farmers use credit for improving their income streams. Interest rate affects any borrowings, it is noted that most smallholder farmers access microcredit, adequate financial literacy encourages positive financial behavior. It is also observed the effects of micro credit can be measured by who has been reached and the impact on welfare and household livelihood, this is according to a study conducted by (Widhiyanto et al., 2018). There is therefore needed to assess the perception of focus groups such as small-holder farmers on the effects of interest rates on their financial capital investment.

According to a comprehensive conceptual framework on financial literacy, basic knowledge in matters such as time value for money, inflation, interest, savings and investment gives a perception and opinion of a person's financial decision (Firli, 2017), this study focused on the general population. The study in Soy sub-location needed to ascertain the perception of smallholder farmers on financial literacy and its effects, this was investigated by our study.

Our study was able to assess the effect of the knowledge and perception in interest fluctuation on the smallholder farmer's financial capital as well as in their choice of products to invest in financially and ultimately on their livelihood in relation to their yield performance.

2.3.3 Risk Diversification and the financial capital investment by smallholder farmers.

Risk diversification entails both on-farm and off-farm diversification, off farm diversification is achieved when farmers generate income from other sources than agriculture whereas on-farm diversification is achieved through agricultural output diversification, product differentiation and non-agricultural output diversification. The findings of studies conducted among Polish farmers indicated that farmers' attitude and knowledge on application of specific risk management tools had a strong link on how they made financial decisions during income drops (Sulewski et al., 2020), this study however does not specify which knowledge influences the farmer's financial decision. Unlike the studies conducted among Polish farmers, a study by Asravor in its finding revealed that specific farmer's risk perception influences their risk-taking

behavior in terms of influencing their decision concerning their agricultural venture and business, this is as opined by (Asravor, 2018). This study concluded that farm and farmer character influence rural smallholder farmers' risk perception and risk management strategies. The study however did not indicate which risk management strategies would influence the farmer's financial capital investment

In its objectives, a study conducted among farmers in Europe revealed that combination of off-farm, on-farm and non-agricultural activities diversification is a resilient strategy for farms in Europe (Benedek et al., 2021). Findings and conclusions of certain studies in Africa show that diversification in farming is employed with much emphasis to help farmers attain ecological benefits such as pest control, soil health and water management, unlike the study by Asravor (2018), this study indicates how farmers would diversify their risk control strategies, however it does not categorically indicate how farmers would invest their financial capital. According to a study conducted by (Rosa-Schleich, 2019) there is identified a need to have evidence in favor of diversification that will translate to economic and financial outcomes, a direct effect to small scale farmer's livelihood. According to a study conducted among smallholder farmers in Mexico, many small-scale farmers face food security and insufficient income despite diversification strategies (Anderzén et al., 2020). These two studies indicate the need for diversification that can translate to economic and financial outcomes that impact farmers' livelihood but do not touch on the effect of diversification on farmers' financial capital investment.

Livelihood strategy diversification such as crop and livestock diversification impact on improving the farmers' livelihood in western Kenya as stated in a study on Improving rural livelihoods as a ''moving target'' (Mukalama, 2015). Increased household savings enabled farmers to adopt better farming technologies which in turn increased their yield and margin (Gikonyo, 2022). Our study assessed the Smallholder farmers' perception of risk diversification and its effect on their financial capital investment.

Table 2.1 Summary of Literature and Research Gaps

AUTHOR & YEAR	FINDINGS	GAPS	TYPE OF GAP	FOCUS OF THIS STUDY
this	Individuals with inflated perceptionof financial literacy tend to make poor financial decisions	The study focused on ascertaining the general gap between self- perceived financial literacy and objective literacy	Conceptual gap	This study focused on a specific group of households,hence our choice of small- holder farmers.
Mpaata, Koskei and Saina (2023)	Financial literacy and self-control predict a savings behavior, yet thesavings behavior is moderated by financial literacy and self-control.	The study generally focusedon SMEs in Uganda.	Contextual gap	This research studied smallholder farmers' perception of financial literacy and its effect on their savings and investment of financial capital.

Richard Asravor	Farm and farmer characteristics areassociated with risk perception andrisk management strategies. Risks perception increases rural smallholder farmers' risk management strategies.	Focused on risk diversification majorly for increasing household incomebut not for investment.	Scope gap	This study focused on ascertaining the farmer's perception of risk diversification and its effect ontheir financial capital investment.
DO Hongo, (2019).	High inflation rates have a negativeeffect on investment and interest rates while favoring the consumeragainst the expectation of the producer	Focuses only on the effect of inflation on the interest rate of general consumers and producers but not smallholder farmers.	Contextual gap	The farmer's perception of the effect of interest rates on their financial capital investment was the focus on our study.
Ikpesu (2021).	High importing nations such as Nigeria have suffered major business setbacks due to fluctuation tendencies of the inflation rate, therefore farmers in Sub Saharan Africa who heavily depend on importing farm inputs	Focus on the effect of inflation on imports of farm inputs.	Scope gap	The study aimed to establish Soy sub-location farmers' perception of total effect of inflation rate fluctuation on the smallholder farmer's savings and investment as a component of financial capital

	gets affected since exporting food becomes non profitable.			
A Firli (2017)	Factors influencing financial literacy	Focused on developing a comprehensive framework on factors influencing financial literacy at all levels.	Theoretic gap	This study focused on how smallholder farmers perceive the knowledge, skill and financial numeracy effects on smallholder farmers' investment offinancial capital. Based on The theory of planned behavior.
Amanulla et al (2020)	Small-scale farmers use credit facilities for survival whereas largescale farmers use credit for improving their income streams.	Focuses on the general use of credit by farmers' without considering if the credit influences their financial capital investment.	Conceptual gap	This study focused on the farmers' awareness of the effect of interest rate credit on the smallholder farmer's financial capital investment after debt.

Widhiyanto et al, (2018).	It observed the effects of micro credit can be measured by who has been reached and the impact on welfare and household livelihood	Focuses on the use of credit by farmers.	Scope gap	Focused on the smallholder farmers' perception on effect of credit on their financial capital investment after debt.
Z Benedek (2021)	A combination of off-farm, on farmand non-agricultural activities diversification is a resilient strategy for firms in Europe	Focuses of risk diversification for the farmer's resilience strategies without considering financial investment.	Conceptual gap	Focused on the smallholder farmer's awareness on the effect of risk diversification onfarmer's financial capital investment.
J Rosa-Schleich (2019	There is identified a need to have evidence in favor of diversification that will translate toeconomic and financial growth, a direct effect on small scale farmer's livelihood.	Focused on a general economic and financial effect without being specific on the aspects of financial and economic growth.	Conceptual gap	Focused on the smallholder farmer's awareness on the effect of risk diversification on farmer's financial capital investment.

Mukalama (2015	Livelihood strategy diversification such as crop and livestock diversification and how it impacts on improving the farmers' livelihood in Western Kenya as stated in a study on Improving rural livelihoods as a ''moving target''.	Focused only on crop adaptability to climate adjustment	Contextual gap	Focused on the smallholder farmer's awareness on the effect of risk diversification onfarmer's financial capital investment.
NW Gikonyo (2022)	Increased household savings enabled farmers to adopt better farming technologies which in turn	Focused on savings and farming technology	Conceptual gap	This study looked at the smallholder farmers' perception of financial literacy and its effect on financial capital investment.
Anderzén et al-2020	Effects of on-farm diversification strategies on smallholder farmer's food security and household economy. Diversification can be an important agro ecological strategy in strengthening livelihood and food security.	Focused on diversification as an agro ecological strategy.	Conceptual gap	This study focused on the farmers' perception of financial literacy and its effect on their financial decision pertaining to financial capital investment.

	Many smallholder farmer's livelihoods are affected.			
S.M.T. Mandeyaand S.-Y. Ho (2021)	Inflation and inflation uncertainty harms a country's economic growth.	This study looked at the whole country's economic growth generally.Not all sectors and individuals are affected uniformly during times of inflation because of the adjustments that they are able to adopt for adaptation.	Contextual gap	This study focused on farmers' awareness on the impact of current and future inflation specifically on the smallholder farmer's financialcapital investment.
Mumuni & Oladele, 2016).	Farmers' access to stronger livelihood capital improves their internal locus, farming management and agricultural entrepreneurial capability	The study did not address the aspect of the farmers' understanding of financial concepts that adequately guide on one's decision in managing their financial capital expenditure, savings and investment	Conceptual and theoretic gaps	This study focused on how the farmer is aware of the direct effect of financial literacy on the investment of financial capital. Our study was based on the Push-Pull theory and theory of planned behavior

2.4 Conceptual framework

The conceptual framework is adopted from the OECD (2012) focuses on three variables, knowledge of concepts such as inflation and investment risk, financial numeracy time, return and interest, behavior, money management, savings behavior, financial decision and participation, attitudes which. This study adopted two of the variables from the OECD (2012) framework, the variables adopted are knowledge and skill of financial concept and the attitude as key independent variable influencing smallholder farmers' financial capital investment behavior. These variable relationships are grounded in a multi-theoretical approach that includes the theory of planned behavior and the Push-Pull theory. These two theories explain how small scale farmers' perception of financial literacy influence behavioral outcomes of financial capital investment. The control variables chosen informed the accuracy in attributing the differences in financial capital investment to the variation in smallholder farmers' financial literacy perception, hence informing the smallholder farmers' financial decisions as has been seen in various studies in developing African countries such as Ghana (Twumasi et al,. 2022)

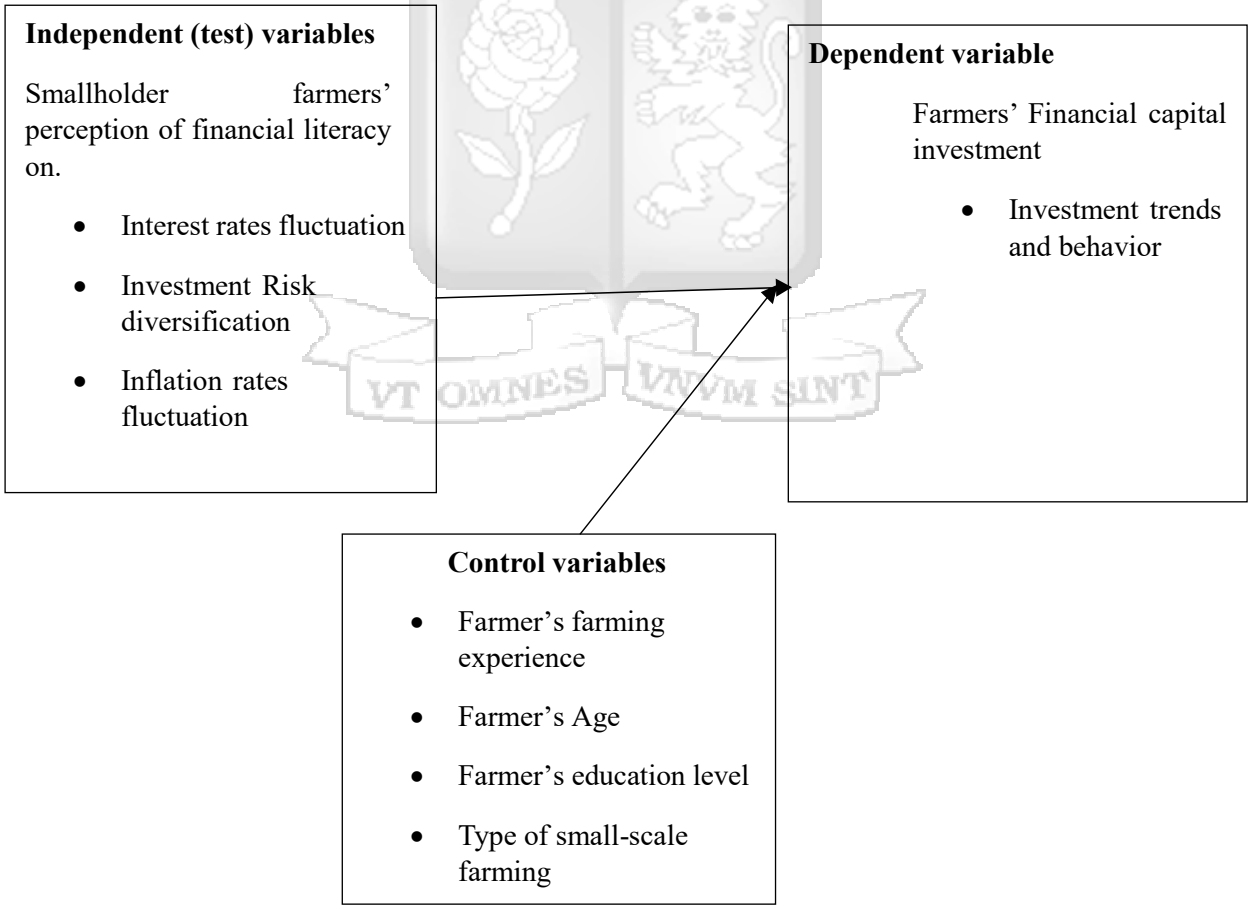

Figure 1 Conceptual Framework

Table 1.2Operationalization of Variables

Variable	**Specific variable name**	**Type of variable**	**Natureof variable**	**Measurement**	**Literature source**	**Theory supported**
Financial literacy	Inflation rate's effect financial investment.	Independent	Categorical	Using the 5 Likert scale the study will assess whether there is evidence of awareness of the effects of current and future inflation rate on investment	DO Hongo, (2019) and Annahmarie Lursadi et al… (2019)	Push-pull theory
	Interest rate	Independent	Categorical	Assessing whether there is confidence in explaining the effects of interest rate fluctuation on investment.	Mitchel Maloba, (2019) A Firli (2017)	Push-pull theory
	Risk diversificationn	Independent	Categorical	Measure whether there is evidence of perception of risk diversification,	Richard Asravor	Push-pull theory

Variable	Specific variablename	Type of variable	Nature of variable	Measurement	Literature source	Theory supported
	Investment risk diversification	Independent	Categorical	Using the 5 scale Likert by assessing whether there is evidence of confidence in diversifying investment.	Anderzen et al. (2020)	Push-pull theory
Financial capital investment	Investment trends	Dependent	Continuous	By assessing whether there is availability of a Single or multiple investment vehicles for the farmer.	Mumuni & Oladele (2016)	Theory of planned behavior

	Financial investments behavior	Dependent	Continuous	By using the 5 scale Likert assessing the evidence of percentage levels of savings	NW Gikonyo(2022)	Theory of planned behavior
Control Variables.	Farmer's experience,	Control	Continuous	No of years engaged in farming	Survey questionnaire	Theory of planned behavior.
	Farmer's Age,	Control	Continuous	Farmers age at the time of the study	Survey questionnaire	Theory of planned behavior.
	Farmer's Education level	Control	Categorical	Highest level of education attained by the farmer	Survey questionnaire	Theory of planned behavior.
	Type of small scale farming	Control	Categorical	The primary agricultural activity	Survey questionnaire	Push-Pull theory

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Financial literacy plays a pivotal role in the economic well-being of individuals and communities, particularly in the context of smallholder farmers. As we delve into the intricate web of financial decisions made by smallholder farmers, this chapter provides a comprehensive exploration of the research methodology employed in understanding the effects of financial literacy on smallholder farmers financial capital investments.

The careful selection and implementation of an appropriate research design are fundamental to the robustness and reliability of any study. This chapter unfolds the methodological framework underpinning our investigation, shedding light on the rationale behind our choices and the strategies employed to capture the relationship between financial literacy and financial capital investment among smallholder farmers.

The study outlines the variables central to it, specifying the independent variable, financial literacy and the dependent variable financial capital investment. This study delved into the intricacies of our chosen data analysis methods, justifying their application in relation to our research questions and objectives. The steps taken to ensure the rights and well-being of the small-holder farmer participants were put into consideration. Furthermore, the study discussed the validity and reliability of our research, acknowledging the inherent limitations and constraints that may impact the study's scope and generalizability.

The study's aim was to provide transparency in approach, thereby bolstering the credibility of findings and contributing to the growing body of knowledge on the central role of financial literacy in shaping the financial literacy landscape and livelihood of smallholder farmers.

3.2 Research philosophy

At the heart of investigation into the effects of financial literacy among smallholder farmers lies a commitment to a pragmatic research philosophy. Pragmatism, as a guiding principle, stems from the belief that research should be purposeful and relevant, aligning theory with practical

application. In the context of smallholder farmers, where the dynamics of financial decision-making significantly impact livelihoods, a pragmatic stance allowed this study to bridge the gap between theoretical constructs and real-world implications. It is belief that knowledge is dynamic and context dependent. Recognizing the complex interplay of factors influencing financial literacy among smallholder farmers, we adopt an interpretivist perspective. This acknowledges the importance of understanding the lived experiences and subjective realities of individuals, as well as the broader social and economic context in which financial decisions unfold.

The study acknowledges that reality is socially constructed, and in this case, smallholder farmers actively shape and interpret their financial environments. This perspective allowed this study to explore the multifaceted nature of financial literacy and its effects by considering the diverse perspectives and contextual nuances embedded in the experiences of smallholder farmers. By adopting a pragmatic research philosophy, this study focused solely on producing knowledge that is both practically relevant and contextually grounded. The choice of pragmatism allowed for methodological flexibility and emphasized the importance of addressing real-world challenges faced by smallholder farmers. Rather than adhering strictly to any single philosophical tradition, pragmatism provided a balanced approach that integrated both subjective experiences and observable outcomes. This philosophy guided the research in uncovering meaningful insights into how financial literacy affects smallholder farmers, with the goal of informing practical interventions and supporting the sustainable development of small-scale agriculture.

3.3 Research design

Research design is a plan providing an underlying structure to integrate all elements of a study for results that are credible, free from bias and maximally generalizable by determining how participants are selected, variables included, data is collected, included and manipulated while addressing the research problem Dannels, (2018)

The research design that will be adopted is a descriptive research design, which provides answers to why and how a particular phenomenon is happening. This study sought to explain the effects of the smallholder farmers' perception of financial literacy on the financial capital investment of smallholder farmers in Soy sub-location Kakamega County. The mixed method research was used where there was a combination of both quantitative and qualitative approaches in our study. The study used primary data to make inferences. The mixed method research is a design for collecting,

analyzing and mixing quantitative and qualitative data in a study to understand a research problem Clark et al. (2008)

3.4 Population and sampling

3.4.1 Target population

The target population was identified guided by a report from Kenya National Bureau of Statistics (2019), which indicates that Kakamega County has 335,269 households practicing small scale subsistence farming in Soy sub-location. Likuyani Sub County has 24,849 households engaged in agriculture out of which 23,110 practice subsistence farming whereas 1,343 households practice commercial farming. Likuyani Sub County has 4 locations and 3 sub locations namely Sango, Soy and Kongoni with each sub location having approximately 1,925 subsistence farmers. In addition to the 331 smallholder farmers who participated in the questionnaire survey, the study also included 18 interview participants for the qualitative component. These comprised 14 Sacco officials, who are directly involved in the financial activities and support systems for smallholder farmers, and 4 agricultural extension officers, who provided guidance on farming and investment practices. These individuals were purposively selected based on their roles and experiences to provide deeper insights into the relationship between financial literacy and financial capital investment among smallholder farmers.

3.4.2 Sampling techniques

This study formulated the problem and design that was followed in the entire study by outlining a strategy using our research variable as the main research tool for the study.

This provided the actual results for data analysis to make conclusions and recommendations, the qualitative data used to address the research objective and problem using both primary and secondary data collection methods. Probability sampling was used during the study to achieve the desired outcome with minimal bias, to determine the optimal sample size, sampling errors and precision of results. Probability sampling is where each member of the target population has an equal probability of being selected as a participant in the study (Stratton, 2021)

The target population was N=1925

The study allowed a +/-5% error. The sample size n was n=N/1+N (e) 2

n=1925/ (1+ (1925*0.05*0.05)) =331.183

The study primarily involved smallholder farmers who are members of the 10 support groups in Soy Sub-location, Kakamega County. Random sampling was applied by obtaining a list of registered members from each support group and using a random number generator to select individuals from the combined list to participate in the study, ensuring that each farmer had an equal chance of being included in the sample.

3.5 Data collection methods

The methods employed included the use of primary data collection through both questionnaires and interview guides. Closed-ended questionnaires were administered to gather quantitative data from the larger population of smallholder farmers. In contrast, open-ended questionnaires and interview guides were used to collect qualitative insights from a targeted subset of participants in Soy Sub-location.

A total of 18 in-person interviews were conducted. These comprised 14 smallholder farmers' Sacco officials and 4 agricultural extension officers. Of these, 15 interviews were conducted during the main study phase (12 Sacco officials and 3 extension officers), and 3 additional interviews (2 Sacco officials and 1 extension officer) were conducted to confirm data saturation. The questionnaires were distributed using both electronic and physical methods. The electronic distribution was conducted through Google Sheets, while physical copies were administered by visiting farmers during their support group gatherings and Sacco regular meetings. The interview guide was used to facilitate structured, in-person interviews with the selected Sacco officials and extension officers to gain deeper insights into their perceptions and experiences related to financial capital investment.

3.6 Data analysis

A descriptive study was conducted to measure the central tendency by obtaining the mean, median, standard deviation variance using the STATA software. There was screening, organizing and sorting of the organized data using excel then exported it to STATA for analysis. A unique data code was assigned to each variable to obtain accurate and all-inclusive results. Tables have been used to represent the frequency of yields and incomes from smallholder farmers. All material collected was used in the analysis to achieve reliability.

The linear regression model was used to address all the research objectives. Y is a continuous variable that takes any value within the range of available responses on the questionnaire. X1-X4 are binary variables.

$$\mathbf{Y= \beta_0+ \beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \beta_5X_5+ \beta_6X_6+ \beta_7X_7+e}$$

Where Y = Farmer's Financial capital investment

β_0 = The interception

β_{1-7} = Coefficients of the Independent variables

X1=Interest rate perception

X2= Inflation rate perception

X3=Investment risk diversification perception

X4= Represents the control variables of farmer's farming experience X5= Represents the control variables of farmer's age

X6= Represents the control variables of farmer's education

X7= Represents the control variables of farmer's type of farming e = Error term

In addition to the quantitative analysis, thematic analysis was used to analyze the responses to the interview questions. This involved identifying, coding, and interpreting patterns or themes that emerged from the qualitative data to provide deeper insights into the farmers' perceptions and experiences related to financial capital investment.

3.7 Research quality

The aim of the study to achieve a more reliable model was then to conduct a qualitative and descriptive Research using subjective methods to collect as much data as it could and be as accurate as it could. Data was collected from a reliable sample of 100%, the results obtained were incorporated the relationship between the data collected and the result obtained

3.8 Validity

Methods of data collection used in this study were ones that represent true and fair values of farmer's behavioral tendencies in relation to financial literacy and financial capital investment.

The study then depicted a Consistency of the results obtained. The questionnaire was subjected to a comprehensive examination of whether the objectives of this research aligned with the research topic. The supervisor evaluated the questionnaire to ascertain whether it adequately covered the aspect of smallholder farmers' financial literacy perception and financial capital investment.

The proportion of variance among variables were evaluated using the Kaiser-Meyer-Olkin (KMO) measure of statistics which compares the magnitude of observed correlation coefficient to that of the partial correlation coefficient. The KMO statistical measure ranges from 0 to 1 with 1 being the highest indicating that the data with 1 is more suitable factor analysis. To identify whether the variables are consistently moving together an explanatory factor analysis (EFA) was conducted to evaluate the validity and reliability of the outer model of this research. In EFA consistent movement of observed variables are identified while putting into consideration cultural difference and the research setting Hadi, Abdullaha, & Sentosa, (2016).

3.9 Reliability and objectivity of the research

This study gave a high validity in the analysis and organization of the research variable. The study employed Cronbach's Alpha reliability test by having a comparison of the covariance and variance. Cronbach Alpha as developed by Lee Cronbach provides a measure of internal consistency of test or a scale, it describes the extent to which all items in a test measure the same concept or construct, the inter-relatedness of various items within a test Tavakol & Dennick, (2011). Cronbach's Alpha coefficient assessed the reliability of the questionnaire and interview guide to get the consistency in measures of intended constructs as it increases confidence and trustworthiness of the research findings while supporting validity of the research conclusions. The reliability obtained by the Cronbach's Alpha coefficient ensured that accurate interpretations are made from the conclusion.

3.10 Ethical considerations

This study sought and maintained the standards set in adherence to ethical approval from NACOSTI and Strathmore Business School's ethic committee. During the study there was adherence to high ethical standards and confidentiality. The study sought consent from the respondent before conducting the study and allowed voluntary participation. The study did not use any names of the respondents in its analysis and coded all the responses.

3.11 Chapter Summary

This chapter presented the research methodology, grounded solely in a pragmatic research philosophy to ensure practical relevance and contextual understanding. A descriptive research design and mixed methods approach were used to explore the impact of financial literacy on financial capital investment among smallholder farmers in Soy Sub-location, Kakamega County. Data was collected through questionnaires and interviews, analyzed using STATA for quantitative data and thematic analysis for qualitative responses. The study employed probability sampling to ensure representativeness, and ethical standards such as informed consent and confidentiality were strictly observed.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The chapter presents the research findings based on the collected data from small-scale farmers in Soy Sub-location, Kakamega County. The study utilized both qualitative and quantitative analysis approaches to provide a comprehensive understanding of the effects of financial literacy perception on financial capital investment among small-scale farmers. The chapter includes background information on respondents, descriptive analysis, correlation analysis, and regression analysis. A summary of the findings is presented at the end of the chapter.

4.2 Background Information

The background information analyzed the profile of the respondents, providing insights into their demographic characteristics, farming experience, and household composition. Understanding these attributes was crucial in evaluating the financial literacy levels and investment behaviors of small-scale farmers in Soy Sub-location. Additionally, this section detailed the response rate, ensuring the reliability and representativeness of the data collected.

4.2.1 Response Rate

The data collection process, conducted between November and December 2024, yielded 331 responses, achieving a 100% response rate. This high response rate was achieved through rigorous field engagement and collaboration with local farmer support groups, agricultural extension officers, and other relevant stakeholders. The responses collected provided a diverse representation of small-scale farmers engaged in different types of farming, ensuring meaningful insights into financial literacy and investment behavior. The study primarily targeted small-scale farmers who were members of 10 farmer support groups within Soy Sub-location. The response rate was considered adequate for reliable data analysis and interpretation, allowing for generalizable findings across the study population.

4.2.2 Profile of the Respondents

The study sought to understand the demographic distribution of the respondents. A summary of the respondent profile was presented in Table 4.1.

Table 4.1 Respondents profile

		Frequency	Percent
Age Group	20-30	30	9.06
	31-40	88	26.59
	41-50	62	18.73
	51-60	81	24.47
	61 and above	70	21.15
	Total	**331**	**100.0**
Type of small-scale farming	Crop	127	38.36
	Livestock	102	30.82
	Mixed farming	102	30.82
	Total	**331**	**100.0**
Years of practiced farming	6 to 10 years	103	31.12
	11 to 15 years	49	14.80
	16 to 20 years	37	11.18
	21 to 25 years	47	14.20
	Total	**331**	**100.0**
Number of Family Members	1 to 3	90	27.19
	4 to 7	137	41.39
	8 to 12	86	25.98
	13 to 15	18	5.44
	Total	**331**	**100.0**

Farm Size in acres	1 to 3	107	32.33
	3 to 5	67	20.24
	5 to 10	15	4.53
	Below 1acre	142	42.90
	Total	**331**	**100.0**

The analysis of the data showed that the highest proportion of respondents (26.59%) were aged between 31-40 years, followed by 24.47% aged 51-60 years. The lowest representation came from respondents aged 20-30 years (9.06%), suggesting that younger individuals were less involved in small-scale farming compared to older age groups. This age distribution indicated the need for targeted financial literacy programs for younger farmers to encourage sustainable investment practices and financial resilience among early-career farmers.

Regarding the type of small-scale farming practiced, crop farming was the most common, accounting for 38.36% of respondents, while livestock and mixed farming had equal representation at 30.82% each. This distribution reflected the diversity in agricultural engagement among farmers in the study area. Crop farmers might face more market volatility due to fluctuating prices and weather conditions, while livestock farmers may deal with issues such as disease outbreaks and feeding costs. Mixed farmers, who integrated both crop and livestock activities, could have a financial advantage in diversifying income sources, reducing risk exposure, and stabilizing investment decisions.

In terms of farming experience, most respondents (31.12%) had been practicing farming for 6 to 10 years, followed by 14.80% with 11 to 15 years of experience. A smaller proportion of respondents (11.18%) had farmed for 16 to 20 years, while 14.20% had between 21 to 25 years of farming experience. These findings suggested that most farmers had significant experience in agricultural activities, which could impact their financial decision-making and investment behaviors. Farmers with longer experience might be better equipped to navigate financial challenges, while those with fewer years in farming might require more financial education and support to enhance their investment decisions.

The analysis of household size showed that 41.39% of respondents had between 4 to 7 family members, while 27.19% had 1 to 3 members. Larger families, with 8 to 12 members, constituted 25.98% of the respondents, whereas 5.44% reported having between 13 to 15 members. This distribution suggested that family size could significantly influence financial planning, as households with more members might have higher financial obligations, affecting their ability to allocate funds toward farm investments. On the other hand, smaller households might have more financial flexibility, allowing for greater investment in productivity-enhancing activities such as farm mechanization, improved seeds, and better livestock breeds.

Regarding farm size, 42.90% of the respondents owned farms smaller than 1 acre, followed by 32.33% with farms ranging between 1 to 3 acres. Only 4.53% of respondents had farms measuring between 5 to 10 acres. The findings indicated that most small-scale farmers operated on limited land sizes, which could restrict investment opportunities. Small farm sizes often necessitate efficient resource allocation, innovative farming techniques, and financial literacy to optimize productivity. Limited land ownership also meant that farmers had to carefully plan their investments, ensuring that financial literacy played a key role in maximizing income from available land.

4.3 Descriptive Analysis

The main research data was collected using a 5-point Likert scale. The analyzed research data was presented using means, with the following scale adopted in the interpretation of the findings: (5.00-4.21) indicated strongly agree, (4.20-3.41) indicated agree, (3.40-2.61) indicated moderate agreement, (2.60-1.81) indicated disagreement, and (1.80-1.00) indicated strongly disagreement.

4.3.1 Farmer's Financial Capital Investment (Dependent Variable)

This section presents the descriptive analysis of small-holder farmers' financial capital investment using both continuous measures and perception-based ratings. The objective indicators analyzed included the number of current investments, the number of financial capital investment avenues, and the proportion of annual income allocated to farming investments. These were complemented by Likert-scale-based items assessing the importance of investing, satisfaction with saving and investment trends, and openness to improved strategies.

Table 4.3 Farmer's Financial Capital Investment Ratings

	N	Mean	Std. Deviation
How important is investing your financial capital?	331	4.1239	1.14934
What percentage of your annual revenue is put into investment?	331	3.2508	1.68252
How satisfied are you with your current saving trend towards investment?	331	1.9245	.83323
How satisfied are you with your current investment trend?	331	1.8822	.81353
Would you recommend a change from the current investment trend/ savings habit to better one?	331	1.8973	.30405
What would be your suggested financial capital investment strategies to be adopted in future?	331	2.5347	.80595

The mean score for the importance of investing was 4.12 (SD = 1.15), placing it in the "Strongly Agree" category, which reflected a broad recognition among farmers of the value of financial capital investment. However, this awareness was not matched by satisfaction with current practices, both saving and investment trends scored low (M = 1.92 and 1.88, respectively), indicating "Strong Disagreement" regarding contentment with the status quo. The mean score for recommending a shift to better strategies also remained in the "Strongly Disagree" range (M = 1.90, SD = 0.30), implying resistance to or uncertainty about changing current financial habits. Suggested future strategies showed a moderate rating (M = 2.53), highlighting openness to improvement but also reflecting limited clarity of what those strategies might entail. Therefore, the descriptive analysis revealed a paradox where small-holder farmers demonstrated a high commitment to financial capital investment in terms of income allocation and diversification but simultaneously reported dissatisfaction with their existing investment behaviors and strategies. This gap between perceived importance and practical satisfaction underscores the need for targeted interventions. Financial education programs, accessible advisory services, and diversified investment tools should be introduced to support farmers in optimizing their financial planning and translating investment awareness into sustainable and impactful economic decisions.

4.3.2 Interest Rates Perception

This section examined how often farmers monitored interest rate changes and the sources of information they relied on for financial capital investment decisions.

Table 4.4 Interest Rates Perception

	N	Mean	Std. Deviation
How often do you check or monitor changes in interest rates before making financial capital investments?	331	4.0514	1.19864
Sources of information do you rely on to stay informed about interest rates for your financial capital investment	331	4.0181	1.6366

The findings revealed that respondents frequently monitored changes in interest rates before making financial capital investment decisions (M = 4.05, SD = 1.20), suggesting that they were highly conscious of how borrowing costs impacted their investment strategies. Similarly, their reliance on different sources of information regarding interest rates was strong (M = 4.02, SD = 1.64), indicating a proactive approach in staying updated on financial trends. The high level of engagement in tracking interest rates suggests that farmers recognize how fluctuations affect their ability to access affordable credit for investments. However, the variability in information sources may indicate that some farmers rely on informal or inconsistent channels, leading to potential misinformation. The findings suggest that while interest rates are closely monitored, there remains a need for more structured financial education programs to ensure that farmers interpret and utilize financial data effectively.

Participants further noted that access to transparent and simplified financial information should be enhanced through digital banking tools and financial advisory services. They suggested that agricultural cooperatives and local financial institutions develop workshops focused on interpreting interest rate trends and their implications for investment planning.

4.3.3 Inflation Rates Perception

This section analyzed farmers' perceptions of inflation and their ability to adjust investment strategies in response to inflationary changes.

Table 4.5 Inflation Rates Perception

	N	Mean	Std. Deviation
Do you believe that having information about inflation rate is important in making decision about your financial investment?	331	3.5257	.82853
How able are you to predict on how current and future inflation rates would have an effect on your savings and investment(s)?	331	3.0846	1.18530
Have you considered adjusting your savings and investment strategies in response to changes in inflation rates?	331	1.8912	.31181
Do you have any difficulty adjusting your savings and investment strategies in response to inflation?	331	1.7281	.44561

The findings revealed that respondents generally agreed that having information about inflation was important in financial investment decisions (M = 3.53, SD = 0.83). However, their ability to predict how current and future inflation rates would affect savings and investments was moderate (M = 3.08, SD = 1.19), suggesting that while farmers were aware of inflation trends, they faced challenges in accurately forecasting its impact on their financial decisions. The variability in responses could indicate that some farmers had access to economic information while others relied on informal sources, which may not always provide accurate predictions. Despite recognizing the significance of inflation in financial planning, farmers showed a low tendency to adjust their savings and investment strategies in response to inflationary changes (M = 1.89, SD = 0.31). This could suggest limited knowledge of inflation-responsive financial instruments or a lack of confidence in modifying existing investment behaviors. Furthermore, the difficulty in adjusting financial strategies due to inflation was evident (M = 1.73, SD = 0.45), highlighting possible structural barriers such as rigid financial systems, lack of advisory services, or liquidity constraints that prevent farmers from adapting their investment strategies accordingly.

Participants further noted that financial institutions should provide more accessible training on inflation and its impact on investment decision-making. They suggested developing farmer-focused inflation tracking tools and offering practical workshops on adaptive financial planning.

Additionally, they emphasized the need for cooperative savings and credit models to help mitigate the adverse effects of inflation on agricultural investments.

4.3.4 Investment Risk Diversification Perception

This section assessed farmers' understanding of risk diversification in financial investments and the strategies they used to balance risk and returns.

Table 4.6 Investment Risk Diversification Perception

	N	Mean	Std. Deviation
How would you rate your level of perception in diversifying your investment(s) risk?	331	2.5136	.76414
Which of the following options do you use to weigh potential returns against potential risks when making financial investment decisions?	331	2.9456	1.28749

The findings indicated a moderate perception of investment risk diversification (M = 2.51, SD = 0.76), suggesting that while farmers acknowledged the need for diversifying investments, they lacked full comprehension of its practical implementation. This could be attributed to a reliance on traditional investment approaches, where farmers may feel more comfortable with familiar financial options rather than exploring diverse investment instruments. The moderate rating on weighing potential returns against risks (M = 2.95, SD = 1.29) further indicates that farmers might not have structured risk assessment models, leading to investment decisions based more on intuition rather than analytical evaluation. The lack of clear risk assessment frameworks among farmers implies that they may not be maximizing their financial potential due to conservative investment tendencies. This could limit their ability to take advantage of high-return opportunities while exposing them to higher risks in times of economic instability. Encouraging structured risk assessment and portfolio diversification techniques could improve their financial resilience.

Participants further noted that limited financial literacy and access to diversified investment products constrained their ability to manage risk effectively. They recommended that financial advisors and agricultural cooperatives introduce targeted financial education programs focusing

on portfolio diversification strategies. Furthermore, they emphasized the need for mobile-based investment platforms to facilitate easier access to diversified financial products suited to small-scale farmers.

4.4 Correlation Analysis

The aim of correlation analysis was to examine the direction and significance of the relationships between the study variables. The study adopted Spearman's rank correlation coefficient, a non-parametric measure suitable for ordinal data, to assess the strength and direction of associations. The significance level was set at 0.01 ($p < 0.01$) to determine statistically significant relationships. The correlation matrix is presented in Table 4.7.

Table 4.7 Correlation Matrix

			Farmer's Financial Capital Investment	Interest rates Perception	Inflation rates Perception	Investment risk Diversification perception
Spearman's rho	Farmer's Financial Capital Investment	Correlation Coefficient	1.000			
		Sig. (2-tailed)	.			
		N	331			
	Interest rates Perception	Correlation Coefficient	.600**	1.000		
		Sig. (2-tailed)	.000	.		
		N	331	331		
	Inflation rates Perception	Correlation Coefficient	.608**	.689**	1.000	
		Sig. (2-tailed)	.000	.000	.	

	N	331	331	331	
Investment risk Diversification perception	Correlation Coefficient	.755**	.700**	.691**	1.000
	Sig. (2-tailed)	.000	.000	.000	.
	N	331	331	331	331

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis revealed a significant positive relationship among all study variables. The results indicated that Interest Rates Perception had a positive correlation with Farmer's Financial Capital Investment ($\rho = 0.600$, $p < 0.01$), suggesting that farmers who actively monitor interest rates are more likely to make informed financial capital investment decisions. This implies that fluctuations in interest rates influence investment behavior, where lower borrowing costs encourage more financial capital investment, whereas higher interest rates restrict borrowing and investment. Similarly, Inflation Rates Perception exhibited a positive significant correlation with Farmer's Financial Capital Investment ($\rho = 0.608$, $p < 0.01$). This suggests that farmers who are aware of inflation trends and their impact on financial stability tend to make strategic investment decisions. This relationship underscores the need for inflation-related financial education programs to help farmers navigate economic fluctuations effectively and adjust their financial planning accordingly.

The relationship observed between Investment Risk Diversification Perception and Farmer's Financial Capital Investment was also positive and statistically significant ($\rho = 0.755$, $p < 0.01$), indicating that farmers who understand risk diversification principles are more likely to allocate financial capital efficiently across different investment avenues. This suggests that financial education and access to diversified investment opportunities could significantly enhance financial decision-making among small-scale farmers. Additionally, Interest Rates Perception and Inflation Rates Perception exhibited positive and statistically significant correlation ($\rho = 0.689$, $p < 0.01$), emphasizing that farmers who track interest rates also tend to be aware of inflation trends, likely due to their combined impact on loan repayment and purchasing power. Moreover, Investment

Risk Diversification Perception showed a positive and significant correlation with both Interest Rates Perception ($\rho = 0.700$, $p < 0.01$) and Inflation Rates Perception ($\rho = 0.691$, $p < 0.01$), suggesting that farmers who are financially informed about macroeconomic variables are more inclined to diversify investment risks effectively.

4.5 Regression Analysis

Regression analysis was conducted to examine the influence of interest rates perception, inflation rates perception, and investment risk diversification perception on farmer's financial capital investment. The study employed multiple linear regression to assess the strength and direction of relationships among the variables. The analysis also included years of practiced farming, farmer's age, farmer's education level, and farmer's type of farming as additional predictors to determine their impact on financial capital investment decisions.

Table 4.8 Regression Coefficients Summary

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.478	.187		11.267	.926
	Interest rates Perception	.057	.014	.069	1.226	.000
	Inflation rates Perception	-.089	.043	-.085	-1.698	.002
	Investment risk Diversification perception	.098	.034	.139	2.732	.000
2	(Constant)	2.206	.206		8.305	.450
	Interest rates Perception	.055	.017	.068	1.242	.000
	Inflation rates Perception	-.082	.046	-.089	-1.645	.000
	Investment risk Diversification perception	.095	.037	.143	2.748	.000
	Years of practiced farming	.057	.019	.059	1.380	.001

Farmer's Age	-.037	.037	-.038	-.600	.006
Farmer's Education Level	-.031	0.48	-.036	-.611	.008
Farmer's type of farming	-.066	.044	-.062	-.609	.000

a. Dependent Variable: Farmer's Financial Capital Investment

The analysis indicated that investment risk diversification perception had the strongest positive influence on farmers' financial capital investment (β = 0.098, p = .000 in Model 1, and β = 0.095, p = .000 in Model 2). This suggested that farmers who actively diversify their investment risks are more likely to adopt financial capital investment strategies. The results reinforced the notion that a sound understanding of risk management significantly shapes the willingness and ability of farmers to engage in productive financial decisions. Interest rates perception showed a positive relationship with farmer's financial capital investment (β = 0.057, p = .000 in Model 1, and β = 0.055, p = .000 in Model 2), and the effects were statistically significant in both models. These findings imply that farmers who consistently monitor interest rate trends tend to align their financial investment decisions, accordingly, highlighting the relevance of macroeconomic indicators in influencing farmer behavior. On the other hand, inflation rates perception demonstrated a negative and statistically significant effect on financial capital investment (β = -0.089, p = .002 in Model 1, and β = -0.082, p = .000 in Model 2). This indicated that higher perceived inflation rates discouraged farmers from committing financial resources to investment, likely due to reduced purchasing power, increased input costs, and heightened uncertainty associated with inflationary environments. Additionally, among the additional predictors in Model 2, years of practiced farming had a positive and statistically significant effect (β = 0.057, p = .001), suggesting that farming experience contributes meaningfully to investment confidence and strategy. In contrast, farmers' age (β = -0.037, p = .006) and farmers' education level (β = -0.031, p = .008) showed negative and statistically significant relationships with financial capital investment. This may imply that older or more educated farmers may either adopt a more conservative approach or channel funds into alternative investment priorities outside agriculture. Finally, farmers' type of farming had a negative but statistically significant effect (β = -0.066, p = .000), indicating that specific farming categories may face distinct constraints or preferences influencing capital is allocated toward investment.

Table 4.9 Regression Summary

Model	R	how R Square	Adjusted R Square	Std. Error of the Estimate
1	.926[a]	.857	.853	.25835
2	.933[b]	.870	.868	.25986

a. Predictors: (Constant), Interest rates Perception, Inflation rates Perception, Investment risk Diversification perception

b. Predictors: (Constant), Interest rates Perception, Inflation rates Perception, Investment risk Diversification perception, Years of practiced farming, Farmer's Age, Farmer's Education Level, Farmer's type of farming

The results indicated a high coefficient of determination (R^2), meaning that a substantial proportion of the variability in farmer's financial capital investment was explained by the independent variables. In Model 1, an R^2 value of 0.857 suggested that 85.7% of the variation in farmer's financial capital investment was explained by interest rates perception, inflation rates perception, and investment risk diversification perception.

When additional variables (years of practiced farming, farmer's age, farmer's education level, and farmer's type of farming) were included in Model 2, R^2 slightly increased to 0.870, indicating a minor improvement in explanatory power. The adjusted R^2 increased to 0.868, suggesting that adding the additional predictors enhanced the overall model fit. The standard error of the estimate remained low, further confirming the reliability of the model in predicting financial capital investment behavior among farmers.

Table 4.10 ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	79.068	3	18.012	290.666	.000[b]
	Residual	10.757	328	.062		
	Total	89.825	331			
2	Regression	79.413	7	10.316	168.541	.000[c]
	Residual	10.592	324	.062		

Total	90.005	331			

a. Dependent Variable: SDG Awareness and Engagement

b. Predictors: (Constant), Integration of SDG-Related Topics and Practices in Curricula, Accessibility to Information, Sustainable SDG Practices

c. Predictors: (Constant), Integration of SDG-Related Topics and Practices in Curricula, Accessibility to Information, Sustainable SDG Practices, University's Commitment to SDG Implementation

The ANOVA results indicated that the regression model was statistically significant in predicting farmer's financial capital investment ($F = 290.666$, $p < 0.05$ for Model 1, and $F = 168.541$, $p < 0.05$ for Model 2). This confirmed that the independent variables had a statistically significant effect on farmer's financial capital investment. The findings suggest that investment risk diversification perception, inflation rates perception, and interest rates perception play a key role in shaping financial capital investment decisions among small-scale farmers. Additionally, years of practiced farming, age, education level and type of farming influence investment decisions.

4.6 Thematic Analysis Summary for Interview Guide Questions

The thematic analysis provided critical qualitative insights that complemented and enriched the quantitative findings of the study. Through in-depth interviews with 18 participants, including smallholder farmers' Sacco officials and agricultural extension officers, recurring themes emerged that shed light on the complex relationship between financial literacy perceptions and investment behaviors. The findings aligned closely with the regression analysis, revealing both consistencies and nuanced contradictions that merited further exploration. Farmers demonstrated a theoretical understanding of key financial concepts such as interest rates, inflation, and risk diversification, yet their ability to translate this knowledge into optimal investment decisions was frequently constrained by structural and systemic barriers (Twumasi et al., 2021). The qualitative data particularly highlighted the gap between financial awareness and practical application. While farmers recognized the importance of financial planning, many relied on informal savings mechanisms due to limited access to formal banking services. This finding resonated with the regression results, where financial literacy alone did not significantly drive investment without complementary factors such as affordable credit and institutional support (Ayuya, 2018). The interviews also revealed that farmers' perceptions of macroeconomic factors like inflation and interest rates were often shaped by immediate, localized experiences rather than broader economic

trends. This contextual understanding helped explain why certain variables in the regression model, such as inflation perception, had a pronounced negative impact on investment, while others, like interest rate awareness, showed weaker correlations.

Table 4.11 Summary of Interviews Conducted

Study phase	Smallholder farmers' Sacco officials	Agricultural extension officers	Total
Main study interviews	12	3	15
Saturation confirmation interviews	2	1	3
Total interviews	14	4	18

As shown in Table 4.11, the study conducted a total of 18 interviews, comprising 14 with smallholder farmers' Sacco officials and 4 with agricultural extension officers. The main study phase included 15 interviews, while an additional 3 saturation confirmation interviews were conducted to ensure data adequacy and thematic completeness. The inclusion of Sacco officials and extension officers was instrumental in capturing a multi-stakeholder perspective on the challenges and opportunities related to financial literacy and investment among smallholder farmers. The high level of engagement with Sacco officials underscored the pivotal role of cooperative structures in shaping farmers' financial behaviors. These officials frequently highlighted the importance of collective savings and credit systems in mitigating individual financial risks, a theme that aligned with the regression findings on the positive impact of risk diversification ($\beta = 0.098$, *p* = 0.000). However, the interviews also revealed that many farmers remained outside the formal financial system due to high interest rates and stringent loan requirements, which corroborated the regression's modest coefficient for interest rate perception ($\beta = 0.057$). Agricultural extension officers, on the other hand, emphasized the need for targeted financial education programs to bridge the gap between financial knowledge and practical application, a recommendation that resonated with the study's broader policy implications.

Table 4.12 Thematic Coding Analysis

Question	Codes	Count

1. What do you understand by financial literacy?	Money management, Investment choice, Financial skills, Record keeping, Budgeting	5
2. To what extent do you think financial literacy affect small-scale farmers' financial capital investment?	Empowerment, Decision-making, Loan access, Unplanned activities, High-cost loans	5
3. What resources do you think would help small-scale farmers improve their financial capital investment?	Special loans, Training programs, Government support, Affordable credit, Business planning	5
4. How familiar are you with the concept of interest rate?	Loan costs, Percentage concepts, Repayment awareness, Rate fluctuations, Banking terms	5
5. Can you be able to explain how interest rate changes affect small farmers' financial capital investment decision?	Loan reluctance, Investment delays, Positive/Negative impacts, Cash flow effects, Replanning	5
6. Have you heard of instances where small scale farmers ever delayed or advanced their investment decision due to interest rate fluctuations?	Equipment delays, Input cost changes, Loan repayment adjustments, Production timing shifts	4
7. Kindly give examples and amounts of investment that small scale farmers delayed or advanced their financial capital investment decisions due to interest rate fluctuations?	Maize milling (Kes 3M), Irrigation projects, Dairy stock changes, Feed cost adaptations	4
8. What do you understand by investment risk diversification?	Multiple ventures, Risk spreading, Sector mixing, Loss mitigation, Income streams	5
10. Do you think it is important for small-scale farmers to diversify their investment?	Risk reduction, Income stability, Loss cushioning, Future planning, Market changes	5
11. Kindly give reasons for your answer on question 10 above?	Risk sharing, Price fluctuation protection, Sustainable income, Failure backup	4
12. What do you think small scale farmers understand about inflation rate fluctuation?	Price awareness, Cost changes, Purchasing power, Limited understanding, Daily impact	5

13. Do you know the current inflation rate and how it affects small farmers' financial capital investment?	Input cost rise (4.5-7.5%), Profit reduction, Crop switching, Herd reduction	5
14. Do you know if small scale farmers have been able to change their investment decisions due to the current inflation rate at any time?	Feed cost changes, Crop substitution, Input reduction, Venture switching	4
15. Share examples and amounts of investment that you think small scale farmers have made due to inflation rate fluctuation?	Poultry feed mixing (Kes 45K), Avocado planting, Coffee substitution, Dairy herd cuts	4

The thematic coding analysis output as shown in Table 4.12, revealed several critical patterns in farmers' perceptions and behaviors. Financial literacy (Q1-Q3) was commonly associated with money management, budgeting, and investment choices, but practical implementation was often hindered by limited access to formal financial services. For instance, while farmers understood the importance of record-keeping, many relied on informal savings groups due to a lack of trust in or access to banking institutions. This finding aligned with the regression results, which indicated that financial literacy alone was insufficient to drive investment without complementary resources such as affordable credit and institutional support.

Interest rate (Q4-Q7) awareness emerged as another significant theme, with farmers demonstrating a theoretical understanding of how rates impact borrowing costs. However, their ability to strategically respond to rate fluctuations was limited. Examples included delaying major investments like maize milling (Kes 3M) or irrigation projects due to prohibitive loan rates (35% p.a.). This reactive behavior was reflected in the regression model's weak but positive coefficient for interest rate perception ($\beta = 0.057$), suggesting that while farmers monitored rates, their investment decisions were often constrained by immediate financial pressures rather than long-term planning.

Risk diversification (Q1-Q11) was widely recognized as a critical strategy for mitigating financial vulnerabilities. Farmers frequently cited the benefits of mixing crops and livestock to buffer against market volatility. However, the interviews revealed that limited access to diversified financial products often restricted their ability to fully implement these strategies. This theme supported the regression finding that risk diversification had the strongest positive effect on

investment (β = 0.098, *p* = 0.000), highlighting the need for financial instruments tailored to smallholder contexts.

Inflation perceptions (Q12-Q15) were another dominant theme, with farmers reporting adaptive behaviors such as switching to less input-intensive crops or reducing herd sizes in response to rising costs. While these strategies demonstrated resilience, they also reflected a short-term focus that could undermine long-term productivity. The regression analysis confirmed the negative impact of inflation perception on investment (β = -0.089, *p* = 0.002), underscoring how economic instability discourages capital allocation.

Table 4.13 Key Statements and Interpretations

Statement	**Interpretation**
Farmers start to mix their own poultry feeds and stop buying ready mixed feeds	Direct cost-saving adaptation to inflation (Price elasticity of demand in action)
Opting for a less expensive venture even if the yield might not be above good venture	Risk-averse behavior due to financial constraints
The presumed cost of preparing one acre of land is Kes 30,000 but a lender may opt to finance at 35% p.a	High interest rates create investment discouragement (Crowding-out effect)
Farmers decided to pool their money and invest in planting avocado trees for export	Collective action as a coping mechanism against market volatility

The key statements from interviewees presented in Table 4.13 provided vivid illustrations of the quantitative findings. For example, the shift to homemade poultry feeds an exemplified price elasticity of demand in action, as farmers sought to mitigate the impact of rising input costs. This behavior aligned with the regression's negative coefficient for inflation perception, demonstrating how inflationary pressures erode investment capacity. Similarly, the preference for lower yield but less expensive ventures highlighted the pervasive risk aversion among farmers, a trend that correlated with the modest influence of interest rates in the regression model. The crowding-out effect of high interest rates was starkly illustrated by farmers' reluctance to take loans for land preparation, despite recognizing the potential long-term benefits. This observation validated the regression's finding that interest rate perception had a limited but positive effect on investment (β = 0.057). Conversely, collective actions such as pooling resources for avocado exports

demonstrated the potential of cooperative strategies to overcome financial barriers, reinforcing the regression's emphasis on risk diversification as a key driver of investment.

Synthesis of the regression findings with thematic analysis enriched the quantitative results by providing a granular understanding of the mechanisms underlying the regression coefficients. For instance, the strong positive impact of risk diversification ($\beta = 0.098$) was not merely a statistical artifact but reflected farmers' active, though often constrained, efforts to spread risks across multiple ventures. Similarly, the negative effect of inflation perception ($\beta = -0.089$) was rooted in real-world adaptive behaviors that prioritized immediate survival over long-term growth. The weaker correlation for interest rate perception ($\beta = 0.057$) mirrored farmers' limited ability to leverage rate fluctuations strategically, a gap exacerbated by systemic barriers like high borrowing costs.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section presents a summary of the findings, as well as a discussion of the findings based on each objective. The chapter also presents the study conclusion, recommendations, and suggests various areas for further research.

5.2 Summary

This study examined the effects of small-scale farmers' perception of financial literacy on financial capital investment in Soy Sub-location, Kakamega County. Specifically, the study assessed how farmers' understanding of interest rate fluctuations, investment risk diversification, and inflation rate fluctuations influenced their financial capital investment decisions. The study adopted a positive research philosophy and applied a descriptive correlational research design to explore the nature and strength of relationships among the key variables. Data was collected using structured questionnaires administered to 331 small-scale farmers, supplemented by 18 in-depth interviews with Sacco officials and agricultural extension officers to provide qualitative context. The study employed both descriptive and inferential statistical methods, including correlation analysis and multiple linear regression, alongside thematic analysis of interview data, to comprehensively evaluate the significance of relationships between the independent variables (interest rates perception, investment risk diversification perception, and inflation rates perception) and the dependent variable (financial capital investment).

The correlation analysis revealed statistically significant relationships between all three independent variables and financial capital investment. Among them, investment risk diversification perception had the strongest positive correlation, followed by inflation rates perception, and then interest rates perception. Results from multiple linear regression confirmed that investment risk diversification perception had a significant positive effect on financial capital investment. Although interest rates perception also showed a positive effect, it was less pronounced. Conversely, inflation rates exhibited a strong negative and statistically significant effect, suggesting that inflation-related uncertainty negatively influenced farmers' willingness to invest financially.

The thematic analysis also provided deeper insights into the quantitative trends. Farmers demonstrated a strong theoretical grasp of financial concepts, particularly risk diversification, which they associated with mixing crops and livestock to buffer against market volatility. However, limited access to formal financial products often restricted their ability to implement these strategies effectively. Inflation emerged as a critical deterrent to investment, with farmers adopting short-term coping mechanisms such as switching to low-input crops or reducing herd sizes that undermined long-term productivity. Interest rate awareness was widespread, but high loan costs (e.g., 35% p.a.) led to delayed or abandoned investments, reinforcing the regression's modest coefficient for this variable. Additionally, the qualitative data also highlighted the role of institutional support in bridging the gap between financial literacy and action. Sacco officials emphasized collective savings and credit systems as vital tools for risk mitigation, while extension officers stressed the need for targeted financial education. These findings aligned with the regression model's emphasis on external enablers, such as affordable credit and advisory services, in translating financial knowledge into investment.

Overall, the study underscored the importance of enhancing farmers' practical financial literacy through context-specific interventions. While awareness of financial indicators was relatively high, systemic barriers such as inflationary pressures, high interest rates, and limited product access hindered optimal decision-making. The study concluded that a multi-pronged approach, combining financial education, cooperative strengthening, and policy reforms to stabilize input costs and credit accessibility, would significantly improve financial capital investment among smallholder farmers. These results contributed to the growing literature on agricultural finance and offered actionable recommendations for policymakers, financial institutions, and development practitioners seeking to advance financial inclusion in rural economies.

5.3 Discussion of Findings

This section discusses the findings established by the study based on the specific objectives and compares them to previous literature.

5.3.1 Effect of Small-Holder Farmers' Perception of Financial Literacy on Interest Rate Fluctuation and Financial Capital Investment

The study found that farmers' perception of financial literacy regarding interest rates had a significant but relatively weak effect on their financial capital investment decisions. This finding

aligned with previous research by Lusardi and Mitchell (2019), who emphasized that while financial literacy enhances awareness of interest rate concepts, its translation into actual investment behavior depends on various contextual factors. The results supported the Theory of Planned Behavior (Ajzen, 1991), which posits that knowledge forms the foundation for behavioral intention, but other factors mediate its implementation. The thematic analysis revealed that farmers demonstrated good theoretical understanding of interest rate concepts, frequently mentioning loan costs and repayment terms during interviews. However, this knowledge rarely translated into strategic investment adjustments due to structural constraints. This implementation gap was consistent with findings by Mian and Sufi (2018), who observed similar disparities between financial knowledge and action among small-scale entrepreneurs in developing economies. The Push-Pull Theory (Lee, 1966) helped explain these results, as farmers recognized investment opportunities (pull factors) but were constrained by high borrowing costs and limited credit access (push factors).

The study's findings contrasted with research by Claessens and Van Horen (2021) in more developed agricultural markets, where interest rate literacy showed stronger predictive power for investment behavior. This discrepancy likely stemmed from differences in financial infrastructure and credit accessibility between the study contexts. Similarly, while Ayuya (2018) found more optimistic results in Kenya, that study focused on larger-scale operations with better access to formal financial services. Thematic analysis highlighted that farmer who participated in cooperative financial structures demonstrated better ability to apply interest rate knowledge, supporting Demirgüç-Kunt et al.'s (2022) emphasis on institutional support as a critical enabler. This contrasted with findings from Balasubramnian and Sargent (2020) in Laos, where informal financial systems showed greater resilience. The current study's results suggested that in the Soy Sub-location context, formal institutional linkages played a more crucial role in bridging the gap between financial knowledge and investment action.

These findings suggested that while both theories explained aspects of the financial literacy-investment relationship, their predictive power varied by institutional context. The results supported an integrated theoretical model where the Theory of Planned Behavior explained individual decision-making processes, while Push-Pull Theory accounted for the structural economic forces shaping those processes, a synthesis particularly relevant for smallholder

agricultural contexts. While supporting the fundamental importance of financial education (Lusardi, 2019), the results emphasized the need for complementary institutional support in smallholder agricultural contexts. The weaker correlation between interest rate literacy and investment action, compared to other financial literacy components, highlighted the sensitivity of capital-intensive decisions to external constraints in resource-limited settings.

5.3.2 Effect of Small-Holder Farmers' Perception of Financial Literacy about Investment Risk Diversification on Financial Capital Investment

The study found that farmers' perception of financial literacy regarding risk diversification had a positive significant effect on their financial capital investment decisions. This finding aligned with previous research by Guiso and Sodini (2019), who demonstrated that financial literacy enables investors to effectively spread risks across diverse assets. The results strongly supported the Theory of Planned Behavior (Ajzen, 1991), as farmers who understood diversification principles showed clear behavioral intentions to allocate resources across multiple ventures. The thematic analysis revealed that farmers frequently articulated the concept of "not putting all eggs in one basket," demonstrating solid grasp of diversification strategies during interviews. However, their ability to implement these strategies varied significantly based on access to financial products and market information.

The Push-Pull Theory (Lee, 1966) provided additional explanatory power for these findings. Thematic results showed that farmers were pushed toward diversification by factors like climate volatility and price fluctuations, while being pulled by opportunities such as cooperative membership and crop insurance availability. This dynamic was particularly evident in discussions about combining crops with livestock or adopting drought-resistant varieties. The implementation gap observed where knowledge didn't always translate to action, mirrored findings by Beck et al. (2020), who identified product accessibility as a major constraint in similar contexts.

The study's findings contrasted with research by Chavas and Kim (2021) in more developed agricultural systems, where farmers showed greater capacity to implement complex diversification strategies. This discrepancy likely stemmed from differences in financial infrastructure and technical support between the study contexts. Similarly, while Piketty and Zucman (2019) found strong diversification effects in European farms, their study examined operations with better access to risk management tools. Thematic analysis highlighted those farmers who participated in

cooperatives, demonstrated more sophisticated diversification practices, supporting Demirgüç-Kunt et al.'s (2022) emphasis on institutional support as a key enabler. This contrasted with Balasubramnian and Sargent's (2020) findings in Laos, where informal systems proved more effective for risk mitigation.

These findings suggested that while both theories explained aspects of the risk diversification process, their relative importance varied by context. The Theory of Planned Behavior better predicted behavior when institutional support was present, while Push-Pull Theory more strongly explained decisions in resource-constrained environments. The results supported an integrated approach where financial literacy programs combine theoretical knowledge with practical tools for implementation, particularly in smallholder agricultural contexts. While confirming the fundamental value of risk management education (Guiso & Sodini, 2019), the findings emphasized the need for parallel improvements in financial product design and delivery systems to overcome structural barriers to effective diversification.

5.3.3 Effect of Small-Holder Farmers' Perception of Financial Literacy on Current and Future Inflation Rates and Financial Capital Investment

The study found that small-holder farmers' perception of financial literacy regarding inflation rates had a statistically significant but negative effect on financial capital investment. This suggested that while farmers were aware of inflationary trends, they faced challenges in adapting their investment strategies to mitigate the effects of rising inflation. These findings are consistent with those of Reinhart and Rogoff (2020), who found that inflation uncertainty often discourages investment, particularly among small-scale entrepreneurs with limited financial buffers. Their study revealed that as inflation rates increase, the purchasing power of farmers declines, making it difficult for them to allocate funds toward long-term investment projects. The thematic analysis provided deeper insight into this relationship, revealing that farmers frequently discussed inflation's impact on input costs during interviews, yet few had implemented formal hedging strategies. This aligned with the Theory of Planned Behavior (Ajzen, 1991), where farmers demonstrated strong awareness (attitude) but lacked perceived behavioral control (tools and resources) to act effectively. The Push-Pull Theory (Lee, 1966) further explained these findings, with farmers pushed toward conservative financial behaviors by rising costs while being pulled

toward potential investments by market opportunities - a tension that often resulted in postponed investment decisions.

Similarly, Bernanke et al. (2021) argued that inflation erodes real income and creates financial instability, leading many small-scale investors to adopt a risk-averse approach to investment. The current study reinforced this perspective by highlighting that many farmers struggled to make financial adjustments in response to inflationary pressures. Thematic results contrasted with findings from Rumler and Valderrama (2020) in more developed agricultural systems, where farmers with access to inflation-indexed products showed greater investment resilience. This discrepancy highlighted how institutional supports the inflation-literacy relationship.

Mishkin (2020) emphasized that while financial literacy plays a role in enhancing inflation awareness, it does not necessarily translate into effective investment decision-making unless complemented by adaptive financial planning strategies. The interviews supported this view, revealing that even financially literate farmers often resorted to reactive measures like reducing input use rather than proactive inflation hedging, a finding that differed from Snell's (2022) observations of U.S. farmers' responses to inflation. Additionally, Stiglitz (2019) highlighted that access to inflation-hedged financial products is critical in safeguarding investments against inflationary shocks. The findings of this study supported this argument by indicating that farmers who lacked access to financial instruments designed to hedge against inflation were more vulnerable to economic instability. Thematic analysis showed that cooperative members, who had better access to financial products, demonstrated more strategic responses to inflation, supporting Demirgüç-Kunt et al.'s (2022) institutional perspective. This contrasted with Akpaeti et al.'s (2018) Nigerian study where informal coping mechanisms predominated.

This underscores the need for financial institutions to develop innovative investment solutions that help farmers protect their capital from inflation-induced depreciation. The results suggested that combining the Theory of Planned Behavior's focus on individual capability with Push-Pull Theory's structural perspective could better explain inflation response behaviors in smallholder contexts than either theory alone. Overall, the findings suggested that while financial literacy influenced farmers' understanding of inflation trends, additional interventions were required to translate this awareness into practical investment decisions. Policymakers and financial service providers should focus on integrating inflation mitigation strategies into financial literacy

programs, such as hedging mechanisms and inflation-adjusted investment products. Strengthening financial inclusion by improving access to inflation-responsive financial services could also enhance long-term financial stability among small-holder farmers.

5.4 Conclusion

The study concluded that small-holder farmers' perception of financial literacy on interest rate fluctuations had a significant effect on financial capital investment. While farmers demonstrated awareness of interest rate trends, the practical application of this knowledge in decision-making was limited. The findings suggested that while monitoring interest rate changes could enhance investment decisions, other factors such as access to financial advisory services, credit availability, and economic stability played a crucial role in shaping investment behavior. Therefore, financial institutions and policymakers needed to strengthen financial education programs tailored to small-holder farmers to ensure that financial literacy is translated into actionable investment strategies.

The study further concluded that financial literacy on investment risk diversification had the most significant positive effect on financial capital investment. Farmers who had a higher understanding of risk diversification were more likely to spread their investments across multiple ventures, reducing exposure to market uncertainties. However, systemic barriers such as limited access to diversified financial products and inadequate credit facilities restricted farmers from effectively implementing risk diversification strategies. These findings emphasized the need for financial institutions to develop investment solutions that catered specifically to small-holder farmers and provide targeted training on risk management practices.

The study also concluded that small-holder farmers' financial literacy on inflation rates had a significant but negative effect on financial capital investment. Although farmers were aware of inflation trends, they struggled to adjust their investment strategies to counter inflationary pressures. This highlighted the need for structured financial literacy programs that included inflation-responsive investment strategies such as hedging and inflation-adjusted financial products. Additionally, improving financial inclusion by enhancing access to inflation-hedged investment options could mitigate the adverse effects of inflation on small-holder farmers' investment behaviors.

Lastly, the study findings confirmed that investment risk diversification had the strongest positive effect on financial capital investment, followed by interest rate perception, while inflation rate perception had a significant but negative impact. These results underscored the need for structured policies aimed at enhancing financial literacy, increasing access to tailored financial products, and strengthening advisory services for small-holder farmers. Government agencies, financial institutions, and agricultural cooperatives should collaborate to implement programs that enhance farmers' capacity to make informed financial decisions, ensuring that financial literacy translates into sustainable investment growth. The study further emphasized that policymakers should develop financial policies that incorporate financial literacy training into agricultural extension services, ensuring that farmers receive ongoing support in financial decision-making. Given that risk diversification had the most significant impact on financial capital investment, financial institutions should focus on developing investment products that encourage farmers to diversify their financial portfolios. Additionally, digital financial platforms should be leveraged to provide real-time financial insights, allowing farmers to respond proactively to changes in interest rates and inflation. These policy contributions highlight the importance of a multi-stakeholder approach in enhancing financial literacy and investment capacity among small-holder farmers, ultimately driving agricultural financial sustainability.

5.5 Recommendations

5.5.1 Based Theory Recommendations

The study reinforced the applicability of the Push-Pull Theory and the Theory of Planned Behavior in understanding smallholder farmers' financial capital investment behavior. The study recommended that future theoretical work should incorporate the role of financial literacy as a mediating factor between external economic pressures (such as inflation and interest rate fluctuations) and farmers' investment decisions. The significant influence of farmers' perception of interest rate trends and risk diversification on investment behavior suggested that behavioral theories should place greater emphasis on perceived financial control and knowledge as key predictors of economic actions. Additionally, it was recommended that academic researchers explore how subjective norms, and behavioral attitudes interact with specific financial literacy components such as knowledge of inflation or risk management to shape actual investment behavior in rural settings.

5.5.2 Policy Recommendations

The study recommended that government agencies integrate financial literacy training into agricultural extension services to ensure that smallholder farmers receive continuous education on financial decision-making. Policymakers were encouraged to collaborate with universities and research institutions to develop structured, evidence-based financial education curricula tailored to the realities of small-scale farming. In response to the strong effect of financial literacy on risk diversification, it was also recommended that policies support the development of tailored investment products for farmers, alongside incentives for financial institutions and cooperatives to offer affordable credit aimed at promoting diversified investment. Moreover, the study recommended that inflation mitigation strategies—such as promoting inflation-hedged products—be embedded within national financial literacy frameworks. A multi-stakeholder approach, involving government, financial institutions, and agricultural cooperatives, was also advised to ensure farmers' access to the tools and resources necessary for effective investment planning under changing economic conditions.

5.5.3 Practice Recommendations

Practically, the study recommended that financial institutions and cooperatives develop structured financial literacy programs focused on the practical application of interest rate knowledge, enabling farmers to adjust their investment strategies in response to prevailing economic conditions. Financial advisory services were recommended for expansion in rural areas to offer farmers real-time guidance on leveraging interest rate trends for investment growth. Given the strong impact of literacy on risk diversification, it was recommended that financial service providers introduce accessible training on risk management and portfolio diversification, while offering credit products that supported diversified agricultural investments. To address the negative perception of inflation, the study recommended the development of inflation-hedged financial products and the use of mobile banking and digital platforms to enhance access to inflation-related financial information. These practices would equip farmers with the necessary tools to make informed, resilient investment decisions.

5.6 Limitations of the Study

This study was subject to several limitations. Its geographic scope was confined to Soy Sub-location in Kakamega County, which restricted the generalizability of its findings to other areas

with different socio-economic or agricultural contexts. The sample predominantly consisted of farmers affiliated with cooperatives or support groups, potentially excluding unorganized farmers who may have exhibited lower financial literacy levels or different investment behaviors. The reliance on cross-sectional data limited the ability to draw causal inferences or observe long-term behavioral trends. Data collection relied on self-reported information, which may not have accurately reflected actual financial practices or literacy levels. Moreover, external macroeconomic factors such as national inflation rates or policy changes were not fully controlled for and could have influenced farmers' investment decisions independently of their financial knowledge. Additionally, some questionnaire items used technical financial terms such as "financial capital investment" and "investment strategies", which may have been misunderstood by smallholder farmers, especially those with limited formal education. This posed a risk of response bias due to misinterpretation. Furthermore, some of the questions required financial knowledge that is typically possessed by experts, which may have limited the accuracy or depth of responses given the non-expert status of the majority of the small-scale farmer respondents.

These limitations suggest opportunities for future research to incorporate longitudinal data, simplify technical terminology for better respondent comprehension, include a more diverse farmer population, and validate findings using objective financial metrics.

financial metrics.

5.7 Areas for Further Research

While this study examined the effects of small-holder farmers' perception of financial literacy on financial capital investment concerning interest rate fluctuations, investment risk diversification, and inflation rates, future research could explore the role of financial policies and government interventions in shaping small-holder farmers' investment behaviors. Additionally, comparative studies could be conducted across different agricultural regions to assess variations in financial literacy levels and their impact on investment decisions. Further research could also examine the long-term effects of financial literacy programs on small-holder farmers' economic growth and financial stability, providing deeper insights into the sustainability of financial education initiatives in the agricultural sector.

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APPENDICES

Appendix I: Introduction Letter

Sharlet Agura

P.O Box 85 30 101, Soy

P.O. Box xx, Kenya

Dear Sir/Madam,

Re: Permission to Conduct Research

I am a student from the Strathmore Business School undertaking a Master of Science in Development Finance. As part of the course requirements, I am required to conduct a research project. My topic of study is the effects of smallholder farmers' perception on financial literacy on their financial capital investment in Soy Sub-location Kakamega County

Therefore, I kindly request you to grant me permission to collect data from you. Upon completion of my study, I will share my findings with you as well as recommendations.

I look forward to receiving positive feedback. Thank you in advance

Yours Faithfully,

Sharlet Agura

Appendix II: Study participant Questionnaire

Please answer the following questions

1. What is your age bracket?
2. How many years of schooling have you had?
3. How many members are in your family?
4. How many years have you practiced farming?
5. How many members are in your family?
6. What is the size of your farm in acres?
7. What kind of farming do you do? (Livestock, crop or both)
8. Do you save/invest any money from your farming revenue? (Yes/ No)
9. If yes, where do you save your money? (Mobile savings, informal group savings, bank, Sacco)
10. What percentage of your annual income do you currently invest in farming activities? % (Numeric input).
11. Do you your savings or investment(s) earn you interest? (Yes/No)
12. Are you able to tell what interest rate in percentage (%) your saving/investment you earn per year? (Yes/No) if yes what percentage
13. How necessary do you find information about interest rate on your financial investment? (Not necessary, somewhat necessary, necessary, very necessary)
14. On a scale from 1 to 5 (1-Not aware, 2-Low, 3-Moderate, 4-High, 5-Very high), how would you rate your current level of awareness regarding interest rates on your savings/ investment
15. How closely do you monitor the interest rate on your savings and investment(s)? (Not closely, rarely, occasionally, closely Very closely)
16. How do changes in interest rate affect your financial investment? (No effect, negative effect, positive effect)
17. Have you received any formal education or training on understanding interest rates for financial investments? (Yes/No)
18. How often do you check or monitor changes in interest rates before making financial capital investments? (Daily, Weekly, Monthly, Rarely, Never)

19. What sources of information do you usually rely on to stay informed about interest rates for your financial capital investment? (Social media, Print media, Tv/Radio, financial training/seminars, Peer information)
20. On scale of 1-5 (1-Very dissatisfied, 2- Dissatisfied, 3-Morate, 4-Satisfied, 5-Very satisfied) how satisfied are you with the current yield and income from your farm?
21. How many investments do you have?
22. In the last one year, have you experienced a situation where your investment didn't bring you the expected return? (Yes/No) , what do you think contributed to the return that you got last year?
23. How would you rate your level of perception in diversifying your investment(s) risk (Low, Moderate, High) _?
24. On a scale of 1-5(1-No idea, 2-Not important, 3-Somewhat important, 4-Important, 5- Very important) how important is investing your financial capital?
25. On a scale of (1 to 5), please rate the level of importance you place on the following types of investments in your farming activities; (1 being the lowest,5 being the highest)
26. What percentage of your annual revenue is put to investment? %
27. Which of the following options do you use to weigh potential returns against potential risks when making financial investment decisions? (Market trends, Customer preferences, advice from financial experts, Local/National government policies)
28. On a scale of 1-4 do you believe that having information about inflation rate is important in making decision about your financial investment? (1- I don't believe so, 2-I somewhat believe, 3-I believe, 4-I strongly believe)
29. How satisfied are you with your current saving trend? (Not satisfied, moderately satisfied, satisfied, very satisfied).
30. How satisfied are you with your current investment trend? (Not satisfied, moderately satisfied, satisfied, very satisfied)
31. On a scale from 1 to 5, How able are you to predict on how current and future inflation rates would influence your savings and investment(s) (1 Not able, 2-Somewhat able, 3-Moderately able, 4-Quite able, 5-Very able).
32. Would you recommend a change from the current investment trend/ savings habit to a better one? (Yes /No) if yes why?

33. Have you considered adjusting your savings and investment strategies in response to changes in inflation rates? And why (Yes/No)
34. Do you have any difficulty adjusting your savings and investment strategies in response to inflation? (Yes/No)

INTERVIEW GUIDE

1. What do you understand by financial literacy?

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2. To what extent do you think financial literacy affects small-scale farmers" financial capital investment? .....

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3. What resource do you think would help small-scale farmers improve their financial capital investment? .....

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4. How familiar are you with the concept of interest rates?

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5. Can you be able to explain how interest rate changes affect your financial capital investment decision?.....

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……

6. Have you ever delayed or advanced an investment decision due to interest rate fluctuations?

.....

.....

7. Kindly give examples and amounts of investments that you delayed or advanced due interest rate fluctuations……
……
……
8. What do you understand about investment risk diversification?
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.....
.....
9. Do you think it is important to diversify your investment risk……
.....
.....
10. Why do you think that it is or it is not important to diversify your investment risk?.....
.....
.....
11. What do you understand about inflation rate in inflation rate? ……..
.....
.....
12. Do you know the current inflation rate and how it affects your financial capital investment?
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.....
13. Have you been able to change your investment decision due to the current inflation rate?
.....
.....
14. Share examples and amounts of investment changes that you have made due to inflation rate fluctuation….....
.....
.....

Appendix III: Ethics Review Letter

Strathmore UNIVERSITY

30th October 2024

Ms Agura Sharlet,
sharlet.agura@strathmore.edu

Dear Ms Agura,

RE: Effects of Small-Scale Farmers' Perception of Financial Literacy on Investment of their Financial Capital - Soy Sub Location-Kakamega County

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2407/24.** The approval period is from **30th October 2024 to 29th October 2025.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

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Email admissions@strathmore.edu www.strathmore.edu

Appendix IV: NACOSTI Letter

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **764049**

Date of Issue: **08/November/2024**

RESEARCH LICENSE

This is to Certify that Miss.. SHARLET UNGAGI AGURA of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kakamega on the topic: EFFECTS OF SMALL-SCALE FARMERS' PERCEPTION OF FINANCIAL LITERACY ON INVESTMENT OF THEIR FINANCIAL CAPITAL - SOY SUBLOCATION-KAKAMEGA COUNTY for the period ending : 08/November/2025.

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764049

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Director General
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THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
    i. Endanger national security
    ii. Adversely affect the lives of Kenyans
    iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
    iv. Result in exploitation of intellectual property rights of communities in Kenya
    v. Adversely affect the environment
    vi. Adversely affect the rights of communities
    vii. Endanger public safety and national cohesion
    viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
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11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

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