

**THE EFFECT OF FINANCIAL LITERACY ON FINANCIAL INCLUSION AMONG
SMALL-SCALE FARMERS IN TRANS NZOIA COUNTY**

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DECLARATION

This research project report is my original work and has not been submitted for examination to any other University.

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LIST OF ABBREVIATIONS

| | |
|-------|---|
| AFC: | Agricultural Finance Cooperation |
| DW: | Durbin Waston |
| FSD: | Financial Sector Deepening |
| GDP: | Gross Domestic Product |
| IPA: | Innovation for Poverty Action |
| NGO: | Non- Governmental Organization |
| SPSS: | Statistical Package for Social Sciences |
| VIF: | Variance Inflation Factor |

ABSTRACT

The objective of this study was to identify the effect of financial literacy on financial inclusion among small-scale farmers in Trans Nzoia County. The study was informed by Asset Building and Financial Inclusion theory, Behavioral Economics, Capability theory, and Institutional theory. Descriptive research design was adopted. The target population was the small-scale farmers in Trans Nzoia County. The sample size was 384 farmers in Trans Nzoia County, who were picked randomly from the various sub-counties within Trans Nzoia. The study collected primary data through a questionnaire. Prior to data collection, a pilot test was conducted to check for validity and reliability of the instrument. Content validity was checked with the help of the supervisor while reliability was tested through Cronbach's test. The questionnaires were administered to the small-scale farmers by the researcher. The collected data was cleaned and examined for completeness and comprehensibility, and entered into the SPSS (Version 20) for analysis. The data was analyzed using both inferential and descriptive statistics. Descriptive statistics used included standard deviation, means, and frequencies and percentages. Multiple linear regression model was used for inferential statistics to establish the relationship between variables. The analyzed data was presented using charts, frequency tables, and percentages. The study found out that saving practice, debt management practices financial planning practices and investment practices by small-scale farmers influenced the access and use of financial practices to a great extent. The study concludes that that there was a positive and significant relationship between saving practices, debt management, investment practices, financial planning services and financial inclusion. As a result, they used the financial services to save for future needs. On addition, an increase in debt management practices significantly increases use and access of financial services by small-scale farmers. Knowledge of investment options translates to knowledge on financial services which encourage small-scale farmers to use and access financial services for services such as savings and for loans to advance their investments. The study recommend that the various micro finance institutions and government agencies should organize financial education and awareness programs to small scale farmers on saving practices, debt management, financial planning and investment practices. Financial education should also be incorporated in the school curriculum from primary level so that individuals are financially informed early in life.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Financial literacy is much more necessary in today's world and is a significant element of sound financial decision-making (Atakora, 2013). A number of academic researchers revealed the significance of financial literacy for a number of features of household's wellbeing as well as economic strength. For instance, Guiso and Jappelli (2008) established that financial literacy has solemn allusions for assets increase as well as portfolio choice. Lusardi and Tufano (2009) established financial literacy have an impact on financial behavior whereby persons with low financial literacy commonly have problems with debt. Individuals who have low financial literacy are considerably less expected to contribute in the stock market (Alessie *et al.*, 2008). The knowhow of income, spending, money management and saving can prepare people with understanding to take charge of their finances (Tschache, 2009).

This study is informed by Asset Building and Financial Inclusion Theory, Behavioral Economics, Capability Theory, and Institutional Theory. Behavioral economics and the institutional theory of saving have informed recent advances in asset building (Sherraden *et al.*, 2015). The capability theory put more stress on the function that access to favorable financial products as well as services plays in households' financial wellbeing (Sherraden, 2010). Financial inclusion involves both the capability to act (knowledge, skills, confidence, and motivation) as well as the occasion to act (through access to beneficial financial products and institutions) (Johnson & Sherraden, 2007). Institutional theory posits that persons and households are faced with institutional-level aspects that make it unfeasible to use financial products and services (Sherraden & Ansong, 2016).

Small-scale farming in Kenya is vital for the economy of the country. Taking maize as the case study, the production of this staple food has been declining from 34 to 25 million bags in the years (Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga, 2011). This situation has been worsened by unsuccessful agricultural reforms that small-scale farmers in the western part of Kenya that have primarily affected the country's main breadbasket. According to Kalunda (2016), small-scale farmers in Kenya do not have enough financial literacy, a section of financial inclusion. The author in his recommendations stated that, there is a need for farmers to be taught on financial education so as to enable them to suitably uses the financial products and services to enhance financial inclusion.

1.1.1 Financial Literacy

Financial literacy refers to the possession of knowledge of how money works and how to manage and invest it, as well as spend it (Atakora, 2013). The topic of financial literacy focuses on the capability of an individual to manage their finances well and make the most appropriate decisions. The significance of the subject matter lies in the fact that making sound financial decisions enables an individual to plan efficiently for their future and that of their families and avoid financial problems.

With the changing financial environment, identifying earnings and ensuring that one does not spend what they do not have is crucial. Relatively, financial education or literacy contributes to stability and growth, affecting socioeconomic levels in the process (Atakora, 2013). Notably, financial literacy is a sign of knowledge of global economics, technology, consumer rights, attention to detail, and organizational skills.

1.1.2 Financial Inclusion

Financial inclusion refers to the use and access of a broad range of affordable and quality financial products and services (Johnson & Sherraden, 2007). It refers to a person being able to make day-to-day financial transactions, safeguard savings, finance small enterprises, plan and pay recurring expenses, mitigate shocks, and improve their welfare.

According to Ford, Baptist, and Archuleta (2011), over 2 billion people (almost half of the world's total populace) lack an account in a formal financial institution. It is an apparent show of financial non-inclusion. There are several reasons why financial inclusion is significant. One is because it reduces poverty and inequality in the society. Second, it drives economic growth. Third is because it enables and empowers members of the community to manage their money and make sound financial decisions. In addition, it leads to individual benefits like growing business, educating children, and handling uncertainties. Essentially, financial inclusion boosts status and income.

1.1.3 Financial Literacy and Financial Inclusion

Literacy and inclusion in financial services and products are imperative in the international community. Financial exclusion affects billions of people worldwide, making them experience economic problems that affect them and their families both in the future and at present (Ford, Baptist, and Archuleta, 2011). There are varied corporate and regulatory constraints that form barriers, leading to an increase in literacy in finances.

In many countries, a large proportion of the populace is still excluded in financial services. One of such nations is Kenya. Policymakers must recognize the imperativeness of efforts to develop financial inclusion strategies and educate the majority of the populace regarding financial

management. National policies at different stage must provide a framework to improve financial inclusion and literacy.

1.1.4 Financial Literacy and Inclusion in Kenya

Small-scale farmers constitute of approximately half of the hungry people in the world. Relatively, they constitute approximately 75% of malnourished children in Africa. Small-scale farming or agriculture is the alternative of intensive or factory agriculture, which is farming on large scale. It is the type of agriculture that takes places on small pieces of land, which in Africa averages to about 2.4 hectares (Graham 2006). Small-scale farming usually takes place on the family land, and is also known as subsistence farming because the farmers focus on growing the products for families and selves. A typical small-scale farm contains crops and farm animals that are enough for a family to clothe and feed themselves on an annual basis. In Kenya, the most important sector of the economy is agriculture. Although between 15% and 17% of land in Kenya has sufficient fertility for farming, only between 7% and 8% of the same falls under the classification of first-class land (for large-scale farming).

In 2006, reports indicate that over 75% of Kenyans made their living from farming (Graham 2006). This is contrary to the 1980s, whereby over 80% of Kenyans made their living through the same way. Therefore, the number of people that depended on farming for their livelihoods continues to reduce with time. In essence, agriculture is the biggest contributor to the gross domestic product (GDP) of Kenya. Agriculture, inclusive of fishing, horticulture, and forestry account for at least 24% of the country's GDP, 18% of employment wages, and 50% of export revenues (Graham 2006 and Koigi, 2012). Kenya is a major producer of coffee and tea in the world. Besides that, it is also a high exporter of mangoes, onion, cabbages, and other fresh

produce in the global economy. Other important farm products of the country are sweet potatoes and maize. Maize is the staple food of the country's citizenry. Taking into account the recent tension that was escalated by increases in prices of food products, coupled with shortages, one cannot overestimate the significance of farming of in the East African giant. Even though two-thirds of Kenyans depend on small-scale (subsistence) farming, the government and other stakeholders have little to support it. Small-scale farmers in the country need help in several areas of the sector including the structuring of farmlands, the information reading the best animals to keep and the type of crops to grown in specific types of soil, and in financial literacy.

Trans-Nzoia County is home to the majority of small-scale farmers in the country. In addition to that, it is one of the most important breadbaskets in the country. Nonetheless, the farmers in the county face multiple challenges, which imperatively affect Kenya's food security. Among some of the most important challenges that they face is the lack of technical know-how. There is also the absence of awareness of modern agricultural practices, financial problems, and weather issues such as drought and floods. Although the exact data on the number of small-scale farmers that are financially literate do not exist, study findings such as Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga (2011), Woomer et al. (2016), and Koigi (2012) point out that majority of small-scale farmers in Kenya, especially Trans-Nzoia County, lack the financial literacy. Conversely, they lack financial inclusion, judging from the fact that there are few or no financial institutions available in the county.

The Kenyan Government, together with other non-governmental organizations (NGOs) have done little to ensure that the farmers have financial know-how in order to make sound decisions regarding their finances and improve their production in the long-run. However, one of the

institutions that have focused on this subject matter is the Agricultural Finance Cooperation (AFC). According to the company's website, in the areas in which it operates, it receives up to 90% of loan applications, processes 85% of them, and uses 83% of its revenue for research and development (Agricultural Finance Corporation, 2017). The parastatal also claims that it gets up to 93% of new clients annually (Agricultural Finance Corporation, 2017). Although these claims and this data cannot be substantiated, the steps that the organization has undertaken to improve financial education among small-scale farmers, helping them to make sound financial decisions in the process, and improve the agricultural sector in western Kenya are laudable. Nevertheless, a lot remains to be done.

1.1.5 Trans-Nzoia County

Trans-Nzoia County is located between Mount Elgon and River Nzoia. Traditionally, it used to be part of the larger Rift Valley Province. The main town of Trans-Nzoia County is the famous Kitale town (Trans-Nzoia, 2017). Kitale town is a multi-cultural town, making it the capital center for the County occupying nearly 15% of the County's population. The County borders Kakamega and Uasin Gishu on the south, Bungoma County to the west, to the east Elgeyo Marakwet and the north West Pokot and Uganda (Trans-Nzoia, 2017). In size, the County covers 2500 km². Its inhabitants are mainly from the Luhya, Sabaot, Maasai and Kalenjin Community. As per the 2009 census, the county is expected to have at least 1,092,023, therefore, approximately 1,000,000 individuals. Trans Nzoia County is divided into 5 constituencies, namely, Kwanza, Saboti, Endebess, Cherangany and Kiminini.

Before independence, the region was mainly occupied by white settlers. They used to do large – scale farming with Africans working in the farms as farm-hands and other odd jobs. However,

after independence, most of the lands were reclaimed by the locals who continued practicing farming, others in large-scale, while others in small-scale. The main economic activity in the area is farming with maize, dairy and wheat farming taking the lead (Trans-Nzioa, 2017). The county is mainly referred to as the food basket of the country due to its produce and fertility. However, it is important to note that most of its inhabitants are poor, making the small-scale farmers.

According to the World Bank (2016), there are approximately 500 million small-scale farmers in the world. The World Bank defines small-scale farmers as individuals who own less than 5 acres of farming land. From these estimates, the number of small-scale farmers in the country could be predicted to be high as huge land owners are pretty little.

1.2 Research Problem

Asset Building and Financial Inclusion theory argues that a person's stock of assets and their participation in the contemporary financial environment is beneficial for them (Ford, Baptist, and Archuleta, 2011). This theory is useful in gauging how assets and financial inclusion is beneficial to small-scale farmers in western Kenya. Behavioral Economics theory questions the rationality of human beings in financial decisions (Bakker, 2011). It is crucial in evaluating the behavior of small-scale farmers in the county both before and after they are financially literate and included. Capability Theory focuses on individual-agency relationship (Ford, Baptist, and Archuleta, 2011). It is important in questioning the ability of the farmer to make sound financial decisions when they have financial literacy and inclusion. Finally, there is Institutional Theory, which emphasizes the role of financial entities (Ford, Baptist, and Archuleta, 2011). It is significant in

highlighting the role of banks and other financial institutions in ensuring that farmers have financial literacy and inclusion.

The level of financial literacy and inclusion in Kenya is low. Small-scale farmers continue to make wrong financial decisions, which negatively affect their families. They lack the knowledge, awareness, behavior, attitude, and skills that are necessary to make sound financial decisions and achieve the ultimate financial wellbeing which is fundamental, not only to them, but also to the Kenyan economy (Graham, 2006). They do not have the capability of managing their assets and money, which puts them in a recurring state of poverty.

Dannenberg and Lakes (2014) provide the significance of mobile phones in supporting financial literacy in Kenya. Their findings show that technology improves financial literacy and inclusion. Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga (2011) conducted a study that showed that small-scale farmers in western Kenya lack the security to obtain credit facilities. The study by Anderson (2015) revealed that financial literacy leads to better inputs, which increase the production potential of small-scale farmers. Financial inclusion amongst small-scale farmers in Trans-Nzoia County would go a long way in enabling them to make sound financial decisions and get access to financial services that help them to boost productivity and eliminate poverty. The various studies have focused on the effects of financial literacy, ignoring whether the knowledge obtained is used by farmers. This research cannot answer all the questions on the subject matter. However, it focused on one aspect that needs exploration, being, and the effect of financial literacy on financial inclusion amongst small-scale farmers in Trans Nzoia County. This begs the question:

What is the effect of financial literacy on inclusion amongst small-scale farmers in Trans Nzoia County?

1.3 Study Objectives

The main objective of this study was to identify the effect of financial literacy on financial inclusion amongst small-scale farmers in Trans Nzoia County.

1.4 Importance of the Study

There are three main stakeholders to whom the findings of this research will be relevant. The first one is small-scale farmers. The findings of this research give the farmers the significance of having financial literacy and give them recommendations where they can find the relevant information. They will also benefit by identifying the institutions from where they can get financial information that they want.

The Government of Kenya is the second primary stakeholder of the research findings. There is reason to believe that the government is not doing enough to provide financial literacy skills to small-scale farmers with the aim of improving food security in the country. This research gives evidence of the need to identify programs to implement to achieve this objective. In addition to that, it will highlight the problems that small-scale farmers in Trans Nzoia County face regarding management of their finances.

The final primary stakeholder is the Kenyan community, which stands to gain from the findings of this research by providing the importance of financial literacy. It will also gain the information and knowledge provided regarding the relevant institutions from which small-scale farmers can benefit. Other stakeholders are scholars on this subject who will identify areas for further studies. They can also use the findings in their pieces of research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

There is substantial literature available regarding the effect of literacy in financial products and services among small-scale farmers in Kenya. This chapter will review fifteen sources of information on the subject matter. Besides this introduction, it has four other sections. Section 2.2 presents the theoretical literature review. It evaluated relevant theories that explain, predict, and expand the understanding of the effects of financial literacy on financial inclusion of small-scale farmers in Trans-Nzoia County. This review will extend and challenge the existing knowledge within the limits of bounding assumptions that are critical. Then, section 2.3 evaluated empirical literature. The sources that this research examined are based on results from experiments, observation, and empirical studies supported by hypotheses. In addition, it reviewed local research regarding the subject matter. This solely focused on information about financial literacy and financial inclusion of small-scale farmers in Kenya, using Trans-Nzoia County as a case study. Section 2.4 gave the theoretical structure that forms the backbone of the study. The final section of this literature review is the summary, which concluded points taken from the review of the three types of literature and established a gap in research, which is imperative for the subsequent chapters and the rest of the study.

2.2 Theoretical Literature Review

This study was informed by four theories. They are Asset Building and Financial Inclusion Theory, Behavioral Economics, Capability Theory, and Institutional Theory. They are discussed in line with the variables of the research, which are financial literacy and economic empowerment, with respect to Trans-Nzoia County's small-scale farmers.

2.2.1 Asset Building and Financial Inclusion Theory

Asset-Building Theory identified that the resilience of the household and improvement thereof depends on its assets, inclusive of financial, human, and physical resources (Ford, Baptist, and Archuleta, 2011). Literature on asset building has its roots in theory and practice and matches saving programs. On the other hand, Financial Inclusion Theory evaluates the reasons that people have behind their decisions of non-participation in formal financial institutions (Ford, Baptist, and Archuleta, 2011).

There is no doubt that some farmers in Kenya are financially included judging from the impact of mobile money transfers, the presence of financial institutions in areas that are rural, and the development of the same, as well as financial services that strictly cater to their needs such as Agricultural Finance Corporation (AFC). The issue lies in financial literacy. The government, banking institutions, and other stakeholders have not done enough to ensure that these farmers have the relevant information and skills to make effective financial decisions. Therefore, the significance of financial literacy among Kenyan small-scale farmers cannot be overstated. It is only through it that this group can support food security not only in Kenya and the African region but also in the global community.

Through financial literacy, small-scale farmers in the country can obtain Agricultural Credit From Banks as well as other financial institutions and be able to use wisely without diverting it to other uses. Relatively, they will use it to improve their production. According to Lusardi and Mitchell (2013), farming should be considered as a business. Hence, basic financial knowledge is important for the advancement of the same. Although arguments abound as to the party exclusively responsible for the literacy programs among the farmers, most authors agree that the

government and the private sector have the main responsibility (Lusardi and Mitchell, 2013). Thus, in partnership, these two must implement programs for the same.

2.2.2 Behavioral Economics

The Theory of Behavioral Economics addresses universal set of partnerships and relationships. It attempts to understand the nuanced behaviors, as premised on the idea that humans are not rational contrary to the assumption by orthodox economics (Ford, Baptist, and Archuleta, 2011). It assumes that individuals highly discount their earnings in the future, and are overconfident regarding their financial capabilities. It links financial empowerment to financial inclusion by theorizing that the well-being of people has a link to what they value and what they can access.

In this school of thought, it is important to note that most small scale in Trans-Nzoia County farmers do not save, are heavily indebted, and do not benefit from the financial services that institutions offer. According to Remmele (2016), people that are financial literate make wise financial choices for themselves as well as their families. They also make knowledgeable decisions regarding the use of financial products and investments. They comprehend their financial responsibilities and rights. One problem that is prevalent among small scale farmers in Kenya, especially in the bread-basket region in the western part of the country, is that they lack basic financial literacy, which is beneficial to them and can enable them to meet their needs, use financial institutions' products and services to achieve their financial objectives, plan ahead, build up savings, protect themselves against financial risks, and prudently invest (Wambugu and FSD Kenya (2008). Relatively, financial education is possible among this group of people through advice and training, instruction, information, and financial education.

Behavioral Economics Theory discusses the effects of a universal partnership between consumers of financial services and the service providers. In this view, there are five basic concepts that the partnership between the financial institutions and the farmers can establish. One of them is an improvement in production of farming products. Then there are savings and asset accumulation, use of financial services, participation in the financial market, and low debt levels. According to Bakker (2011) and Remmele (2016), the small scale farming community is making great losses because of their absence of financial literacy. Although they have all the capability, the limitation of agricultural production is due to their limited financial knowledge and skills. To increase the food security in Kenya, these five concepts of financial knowledge are imperative.

2.2.3 Capability Theory

This theory broadly focuses on the relationship of well-beings of humans and individual-agency. It primarily highlights the ability of the individual in accessing and benefiting from financial services provided by institutions (Ford, Baptist, and Archuleta, 2011). People have the responsibility to seek the opportunities presented by financial service providers. In Trans-Nzoia County, financial literacy is low because of the reluctance of the farmers to seek the opportunities.

Financial literacy has received substantial attention. It has been a subject of academic and non-academic discourse both at the global and national level. A growing literature suggests that financial literacy is positively correlated with better living conditions. For example, Graham (2006) argues that the Kenyan society is better than in the previous decades because of the important role that financial education plays in the populace. This is similarly relevant to small-scale farmers in Kenya because of the growing food insecurity that the country has been

experiencing in the near past and is likely to continue if it is not adequately addressed. Part of the problem is due to mismanagement of funds (revenue) by the farmers who lack sufficient knowledge of finances. Therefore, if this country is to address the issue of food insecurity and other related agricultural issues, it must first address financial literacy among small-scale farmers, especially in the western region.

Financial literacy is significant and relevant in the contemporary society regardless of the gender, area of residence (rural or city), age, education, or level of income. The level of financial know-how is higher in urban areas than in the rural community. Kenya is among the nations in Africa with one of the lowest levels of financial literacy in the world. It is also one of the countries in the global community with the lowest savings rate (Bakker, 2011). It is imperative to note that with the constant rising costs of living, people, especially the rural populace; people must comprehend the importance of living within their budget. Other concepts of financial literacy that are vital are how to responsibly borrow, save, stay out of debt, and make informed choices about the use of financial resources that a person has. Most small-scale farmers do not understand the concept of financial literacy in Trans-Nzoia County. They lack the skills and knowledge, as well as the confidence to make informed financial decisions.

2.2.4 Institutional Theory

This theory embraces the role that financial institutions have in providing knowledge of the services that they offer. According to Ford, Baptist, and Archuleta (2011), it disapproves that the financial market is frictionless. It embraces a world in which organizations, networks, norms, and rules construct parameters of the partnership between service providers and consumers. The

theory emphasizes on the role that financial institutions have to play in the provision of knowledge to improve behavior among financial services consumers.

Financial knowledge is vital for sound financial behavior. Research findings by Wambugu and FSD Kenya (2008) indicate that absence of the same is an impediment not only to food security but also access to financial services and products that are vital for the general economic growth and development in the country. There is an argument by several scholars including Bakker (2011) that financial education is supposed to be a part of the curriculum at the primary level so that the rural community can get basic financial education in such a way that it can employ the skills and knowledge into everyday practice. It is only through this strategy that Kenya can transform itself into a middle-class economy. The education programs can play a critical role in the creation of attitudes and awareness for small-scale farmers through which they can adopt good financial management practices. At the individual level, the farmers will also be able to utilize their sources effectively and choose the services and products that best meet their needs. Remmele (2016) states that financial literacy holds the future for the African community. It is applicable to the Kenyan situation because small-scale farmers are a vital part of the society.

2.3 Empirical Literature Review

The objective of the study by Dannenberg and lakes (2014) was the role of mobile phones in the financial literacy of Kenyan small-scale farmers in the Mount Kenya region and their impacts on their small-scale farming. The scholars used data from expert interviews and questionnaires. The result of the study was that mobile phones are responsible for four types of exchange; including networking and organization, complex financial knowledge, financial information and financial transactions. The scholars also found that mobile phones improved small-scale farmers'

knowledge of integration in the international value chain, competitiveness, knowledge transfer, marketing, production, and payment.

The sample of the study was from Kenya, where small scale vegetable and fruit farmers were selected. Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga (2011) used systematic sampling to select two hundred small-scale farmers from Busia, Mt. Elgon, Bungoma, and Lugari districts. The researchers purposively selected them. They also selected extension staff through the same methodology. Both open and close-ended questionnaires were developed and the participants interviewed. The scholars then analyzed the data using statistics of description with the application of Statistical Package for Social Sciences (SPSS). Results showed that small-scale farmers in the western region do not have sufficient knowledge regarding financial products and services, technical know-how, and best agricultural practices. Besides that, the results showed that the farmers do not have the financial security to obtain credit facilities with low interest rates.

In the study by Anderson (2015), a sample of 49 respondents was interviewed using open-ended questionnaires. The objective of the scholar was to determine the potential of small-scale maize farmers in western Kenya if they utilize different kinds of fertilizer and how it would impact their income. The scholar used descriptive research and both qualitative and quantitative data to achieve his objective. The results of the study revealed that with better fertilizers, the farmers have a better potential of improving their production. However, to afford the fertilizer, they must have the financial ability, which they can only achieve through financial education and inclusion. The scholar concluded that stakeholders must get involved in improving the financial knowledge of the farmers.

Kalunda (2014) had the objective of identifying the impact of the financial inclusion on small-scale farmers in the County of Nyeri. The scholar also investigated the relationship between age and gender in both the use and demand of financial services. The methodology employed was the Pearson Chi square method. The findings indicated that the level of the financial inclusion in the county with regards to credit facilities use was high. However, the researcher yielded inconclusive results with regards to the use of the Pearson Chi Square method in identifying the relationship of age and gender in the demand for financial services. The research gap found was the appropriate use of financial education and counseling to empower the small-scale farmers.

The study by Woomer et al. (2016) took place among small-scale farmers in western Kenya. It consisted of a structured survey among 291 households that were randomly selected. The sample was then compiled in a single spreadsheet. Using stratification into three criteria (sex of the head of the household, agroecological zone, and endowment of household resources), the researchers conducted the study to identify the kind of opportunities that the farmers have. The conclusion was that the best way to ensure that small-scale farmers in the region take advantage of the available opportunities is to conduct financial education so that regardless of the characteristics of the households, the farmers can make informed decisions about finances and effectively utilize the opportunities.

Research findings by Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga (2011) show that among the small-scale farmers who have financial literacy and inclusion have been able to fulfill their social, family, and personal responsibilities, among others. It also shows that they have been able to pay their taxes and take advantage of the financial services and products that banks and other financial institutions provide. In this school of thought, a large number of the farmers

have been able to secure loans for expansion of their agricultural production such as the purchase of agricultural land and fertilizers, as well as tractors and other machinery to improve their produce (Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga, 2011).

It is these same findings that Anderson (2015) provides in his study. According to him, although only a small number of small-scale farmers in Kitale are financially literate, this number has witnessed substantial changes in their economic lives. For example, they learned how to save and use their savings wisely. Furthermore, other empirical studies like Kalunda (2014) establish that most small-scale farmers have been able to lift themselves out of poverty as a consequence of financial literacy. Although her study is about small-scale farmers in Nyeri, the findings are relevant and applicable to farmers in Kitale. Hence, with financial education, the country is bound to experience minimal poverty and economic growth. Drawbacks in poverty alleviation, economic development, and growth can only be witnessed in a populace without sound financial knowledge. Relatively, Woomer et al. (2016) provide study findings that indicate that despite the steps that the country has made regarding financial inclusion among its citizens, at least 50% of some regions is not included and lack basic financial knowledge and skills. A large part of this region is Western Kenya, where there are most small-scale farmers. This greatly underscores the achievement of Vision 2030, which among others, also banks on the financial literacy of the rural community.

In evaluating the impacts of financial literacy, it is vital to note the effects of financial illiteracy. Study findings by Woomer et al. (2016) and Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga (2011) show that not only is it responsible for the rampant poverty that is consequential of lack of financial management skills, but also the food insecurity that the country is currently facing.

Financial illiteracy makes the implementation of informed actions and decisions a challenge. The financial well-being of the small-scale farmers' fraternity is low because of the constant wrong decisions that they make when they have the revenue from the same of their agricultural products. In addition to that, the farmers cannot reliably assess opportunities and risks through which they can be financially stable. In Anderson's (2015) words, financial illiteracy is a "handicap" among the small-scale farmer Kenya. They cannot be financially secure without the knowledge on how to save, invest, and appropriately use the resources. In addition to that, they are at risk of fraud and trickery. In this line of reasoning, it is imperative to note the several cases whereby when the farmers get their revenue from the sale of their agricultural products, they abandon their families and use the money to travel to the coastal region and spend all of it without making any investments or savings.

Agricultural Finance Corporation (2017) conducted a study on the project that it conducted among 15,000 small-scale farmers. The main goal was to identify the impacts of its program in the lives of the small-scale farmers. It employed descriptive research and quantitative data to achieve its objective. Using open-ended questionnaires, AFC (2017) collected the relevant data using interviews and other secondary sources of data. The conclusion was that since it benefited thousands of the small-scale farmers, there is a need to employ similar projects in the region to ensure that farmers benefit from improved financial knowledge.

Relatively, in the study by Gichamba, Waiganjo, and Orwa (2015), the objective was to ascertain the shock associated with the application of mobile money among small-scale farmers in Kenya. Similar to the previous pieces of research, the scholars also utilized descriptive research. However, their sample was relatively big, consisting of 300 respondents. The mobile money

services that they focused on were credit facilities, record keeping, and obtaining advisory information. The conclusion was the introduction of financial education in primary schools to enable the rural populace to practice the concepts taught as they grow up.

Koigi (2012) carried out a study with the objective of establishing how to best improve small-scale farming in the country. Using a sample of 100 respondents in western Kenya and a number of secondary sources of information, the researcher established that financial knowledge is the biggest impediment to the improvement of small scale farming in the region and in the country as a whole. The findings found that the research gap involves the impacts of financial literacy in financial inclusion among the farmers.

Thayer (2014) focuses his study on female farmers and how the financial irresponsibility of male farmers who are the heads of their households among the small scale farming families in western Kenya affects them. Using a small sample of ten households, the scholar employed descriptive research to achieve his objective. His findings indicate that female farmer and female members of the western region society should be financially empowered so that they can take part in effective decision-making regarding finances in the household.

Rural Finance and Investment Learning Center (2017) conducted a study regarding the impacts of financial illiteracy among small-scale farmers in western Kenya. The organization established that it (financial illiteracy) is the biggest impediment to the development of small-scale farming in the region. Using secondary data from financial institutions, the organization found that the illiteracy limited the use of available financial services among the farmers. It considers that financial education is the best strategy for stakeholders to implement in order to improve agricultural yield in the region.

A financially literate populace knows how to manage its money, comprehend the functioning of financial institutions, and possesses a variety of analytical skills through which it makes informed decisions. Unlike their counterparts in West Africa (especially Ghana and Nigeria), Kenyan small scale farmers do not even know the kind of products that the financial institutions offer (Rural Finance and Investment Learning Center, 2017). This is a sad state of affairs. Conversely, they do not know how to responsibly handle their financial affairs. A survey conducted by Koigi (2012) revealed that financial literacy in the western region is dependent on the level of education of the citizens. Accordingly, most members of the rural community do not have substantial education. Most of them do not go beyond primary school education. Consequently, they do not get the opportunity to learn about sound financial management. That is why both Koigi (2012) and Gichamba, Waiganjo, and Orwa (2015) propose the introduction of financial education at the primary level of education. It is crucial to note that women in Kitale are more financially literate than their male counterparts (Gichmaba, Waiganjo, and Orwa, 2015).

2.4 Conceptual Framework

The goal of a conceptual framework is to conceptualize the link between variables and to show the relationship graphically or diagrammatically. In this research, the conceptual framework illustrated the interaction between independent variables and the dependent variable. Independent variables are saving practices, debts management, financial planning, and investment practices while the dependent variable is financial inclusion.

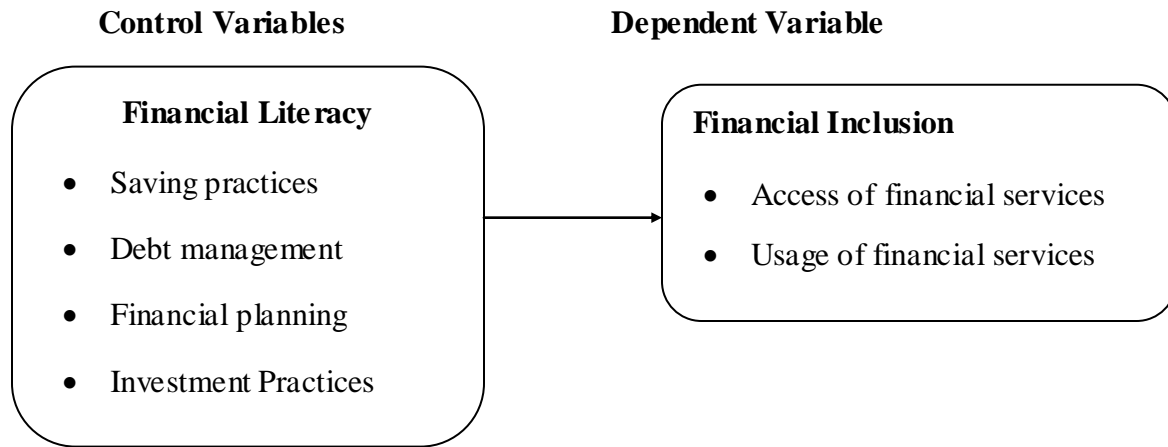


Figure 2.1 Conceptual Frame work

2.5 Summary of Literature Review and Knowledge Gaps

Judging from the theoretical, empirical, and local research, it is clear that there is a gap in the knowledge that scholars are yet to fill. This is in regards to the impacts of financial literacy in financial inclusion in the country. Most of the sources of literature reviewed put an emphasis on the problem more than to the solutions. Similarly, most of them do not investigate the effects of the same. Although they touch on it, they do not deeply evaluate it. For example, Gichamba, Waiganjo, and Orwa (2015) emphasize the problems of the absence of financial literacy and education among western Kenyan small-scale farmers. Their solution is for the government and the private sector to work in unison and provide financial education. On the other hand, Ali-Olubandwa, Kathuri, Odero-Wanga, & Shivoga. (2011) provide statistics that show the extent of the problem. The scholars do not investigate the impacts of this problem or how to solve it. In the same school of thought, Wambugu and FSD (Kenya) only touch on the lack of financial education among Kenyan in general and farmers in specific. They do not evaluate the alternative solutions or the impacts of the same.

Therefore, there is a great need for scholars to study the effects and provide feasible and practical alternative solutions for the farmers. It is imperative to note that the Kenyan economic growth largely depends on small scale farmers being that agriculture is the backbone of the economy. Additionally, food security, an issue that has come in much focus in the recent past, more so because of the maize shortage that the country has been facing, despite it being fully capable of meeting its needs. Hence, the available scholarly discourses and information are not enough to address this problem. The gap in knowledge lies in the lack of sufficient information to highlight the impacts of the financial illiteracy and potential literacy among small-scale farmers in the western region, especially in Trans-Nzoia County. That is what this research addressed. Among many other issues, it highlighted the role that financial institutions have and the impacts of their involvement in the provision of financial education and literacy programs among the farmers. Other than that, it also defined the role of the government in the subject matter. It is only by providing sufficient and reliable information and knowledge about the impacts of financial literacy among Kenyan small scale farmer that the way to alleviate poverty and improve economic growth can effectively be successful.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter focused on the procedures and methods to be used to conduct the study. The chapter includes the study population, the research design, data collections instruments, and procedures, the pilot test and data analysis and presentation methods. The chapter held the backbone to how efficient the study was conducted to give reliable and accurate results.

3.2 Research Design

Research design acts as the map that enable a researcher to produce results to the given research problem and acts as a guideline for the researcher to follow (McLaughlin, 2012). For this study, a descriptive research design was adopted. Descriptive research designs allow a researcher to collection information, simplify, present, and analyze it to produce results. Descriptive design allows a researcher to focus on a large sample group and gives proper description of the research population. The design technique is best for conducting social research involving humans as it gives accurate data from collection to analysis and providing accurate answers to the given hypothesis. (Williams, 2007).

Descriptive research design was the most appropriate design to be used for the study as it provides sufficient grounds to collect data accurately and provide reliable results conducive to answer the research question. The design also allowed efficient use of questionnaires that assisted in the collection of both qualitative and quantitative data.

3.3 Population

Population study is the set of variables, people objects, or events under investigations. They may be real or hypothetical. Normally, the variables under a given population study do contain a common characteristics that enables them to be identified under a common pool (Bryman, 2012).

In order to analyze the consequence of financial literacy in financial inclusion in Kenya, the study targeted the small-scale farmers in Trans Nzoia County. Majority of the farmers in Trans-Nzoia County are small-scale farmers. Therefore, the population of small-scale farmers in Trans-Nzoia County is large and there is no defined statistics on the total population. The study will relied on statistics by the Kenya National Bureau of Statistics.

Though the research is meant to give a result that resembles the country as a whole, focus will be on small-scale farmers in Trans Nzoia. The expected population as per 2009 census in 1,000,000 individuals (Trans-Nzioa, 2017). The exact number of small-scale farmers in the state is currently unknown.

3.4 Sampling Technique and Sample Size

In order to proper conduct a research with a large population, sampling is used. Sampling is a method or process that enables one to choose a sub-group from a given wide population that resembles the population under study. Sampling involves selecting a given number of individuals in such a way that they represent the general population in question (Mugenda, 2008). On the other hand, Bernard (2013) views a sample as sub-group within a larger main group.

The study determined the sample size using the Cochran (1963) formula for populations that are large. The developed equation takes the following form

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where: n_0 = required sample size

Z = Confidence level at 95% (standard value of 1.96)

p = is population proportion

e = Margin of error at 5% (standard value of 0.05).

$$n_0 = \frac{1.96^2 \times 0.5 \times (1-0.5)}{0.05^2} = 384$$

$$\text{Therefore, } n = \frac{n_0}{1 + (n_0 - 1)/N}$$

$$= \frac{384}{1 + (384 - 1)/1,000,000}$$

$$= 383.85$$

The sample size was 384 farmers in Trans Nzoia County. The samples were picked randomly from the various sub-counties within Trans Nzoia. Considering Trans-Nzoia County has 5 electoral zones, I will made sure that at least each electoral zone is divided into two. This means that there were 10 zones; each was required to produce at least 38-40 respondents for accountabilities sake.

3.5 Data Collection

Data collection focused on primary data. Questionnaires were used to collect primary data as they are effective and simple to use. However, the questionnaires had both closed as well as open ended questions to allow the researcher to also collect secondary data. The questionnaires were

presented to the small-scale farmers by the researcher. Personal administration of the questionnaire ensured that the researcher explains and clarifies items in the questionnaire to the respondents.

The questionnaire was considered as the appropriate data collection instrument for this research as they ensure competent and accurate data standardization. In addition, quickly and accurately collected information from the given study group without causing un-wanted tensions among the individuals under study. They were also cheap to prepare and distribute.

Questionnaires were also able to give a detailed answer to complex problems. Questionnaires have been found by researchers to be the most appropriate instrument for data gathering collection in survey studies (Kombo & Tromp, 2009).

3.6 Pilot Test

In order to ascertain that the research has no limitation, weaknesses, or any flaws on its design and data collection instrument, pilot tests were used to allow for any amendments prior to the original research. According to Sekran and Bougie (2009), a researcher should use pilot tests to test the validity of the study and reliability of the instruments used to conduct the study. For this research, a sample of 10 respondents will be used to conduct the pilot study.

On the other hand, Validity means the issue of whether or not an indicator (or set of indicators) that is planned to measure an idea actually measures that notion (Bryman & Bell, 2011). This study adopted content validity. An instruments' content validity is effectively enhanced through specialist ruling. For this research, content validity was ensured by subjecting the questionnaires to a panel of peers to make sure that each question is useful, objective and address the research

question appropriately. The responses for each of the items by the panelists were evaluated using a content validity ratio. Those found to have met the statistical significance value were retained for the study (Cooper and Schindler, 2011).

Finally, reliability is the degree of steadiness of the model (Bryman, 2012). An instrument is said to be reliable if it is able to give results that are dependable. The Cronbach's alpha (α), which was created using the internal consistency technique, was used to make sure that the instruments have perfect internal consistence and to measure the underlying construct reliably. Cronbach's alpha (α) is a coefficient (a number between 0 and 1) that is used to rate the internal consistency (homogeneity) or the correlation of items in a test. Reliability coefficient of 0.7 was in use as the rule of the thumb to signify an satisfactory level of domestic consistency (Bryman, 2012).

3.7 Data Analysis and Presentation

Once the data was collected, it was examined thoroughly and checked for comprehensibility and completeness. After that, the raw data was subjected to cleaning and passed through SPSS Version 20 for analysis) Statistical Package for Social Sciences. The findings were analyzed using both inferential and descriptive statistics. For data analysis, standard deviation, means, and frequency will be used for the descriptive statistics

On the other hand, bar charts, pie charts, frequency tables, and percentages were used for the quantitative data. For the qualitative date, they were categorized in groups with regards to the research objective and reported in prose format together with the quantitative data results. Multiple linear regression model was used for inferential statistics to establish the link between variables.

3.7.1 Conceptual Model

The conceptual model took the following form:

$$Y = f(X_1, X_2, X_3, X_4) \quad (1)$$

Where: Y = Financial Inclusion

X₁ = Saving practices

X₂ = Debts management

X₃ = Financial planning

X₄ = Investment Practices

3.7.2 Analytical Model

The analytical model took the following form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_i \quad (2)$$

Where: Y = Financial Inclusion

X₁ = Saving practices

X₂ = Debts management

X₃ = Financial planning

X₄ = Investment Practices

β_0 = the intercept (value of EY when X = 0)

β_1 = the regression coefficient or change included in Y by each χ .

ε_i = error term

3.7.3 Measurement and Operationalization of Variables

Table 3. 1 Measurement and Operationalization of Variables

| Study Variables | Indicators |
|---------------------------|--|
| Dependent Variable | |
| Financial Inclusion | <ul style="list-style-type: none"> • Access of financial services (Frequency of use of Financial Services) • Usage of financial services (Frequency of usage of Financial Services) |
| Control Variables | |
| Saving practices | <ul style="list-style-type: none"> • Amount saved • Frequency of saving |
| Debts management | <ul style="list-style-type: none"> • Ability to pay debts (How soon debts are paid) • Timely payment of bills/borrowings (Time taken to pay debts) |
| Financial planning | <ul style="list-style-type: none"> • Budgeting (Frequency and extend of Budgeting) • Spending plan (Rate of spending) • Money management goals (Achievement of financial goals made) |
| Investment Practices | <ul style="list-style-type: none"> • Knowledge on investment Awareness regarding about investment options • Ability to finance the investment Level of enhancing access and use of financial services (Likert scale) |

3.7.4 Diagnostic Tests

This section presents the results of the diagnostic tests carried out on the data to test for stationarity, multicollinearity, test of serial correlation, heteroskedasticity and test of statistical significance of regression coefficients.

Stationarity Test

The study first began by assessing the relationship or association of dependent and independent variables. After that, the variables were subjected for stationarity testing. Thus, the time series properties of the variables were discovered to establish the order of incorporation of each variable involved in the model. A popular unit root test, which is Augmented Dickey-Fuller (ADF) was used to examine the stationarity condition of the variables. The real meaning of this test was to shun false regression problem usually coupled with time series econometric modelling (Granger & Newbold, 1974).

Test for Multicollinearity

Multicollinearity occurs when the control variables, in this case debt management, saving practices, financial planning and investment practices are inter-correlated; its presence can adversely affect ones regression results.

A variance inflation factor (VIF) test was conducted to detect multicollinearity in the regression model. The VIF approximate the number of the variation of a regression coefficient is exaggerated as a result of multicollinearity in the model. The VIF was calculated using the SPSS software. A rule of thumb for interpreting the variance inflation factor is that, a value of 1 means not correlated, values between 1 and 5 means moderately correlated, while values greater than 5 means highly correlated. The more the VIF increases, the less reliable the regression

results are going to be. In general, a VIF above 10 indicates high correlation and is cause for concern.

Test of Serial Correlation

One assumption that allows the use of a regression model is that the variables are uncorrelated with each other. However, it happens a time when the variables happen to be correlated with each other, this is known as serial correlation. Serial Correlation of variables means that the estimates obtain using ordinary least square model for regression are still unbiased, but inefficient.

The Durbin Waston Test was applied to test the occurrence of sequential relationship for the model. The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis. The test will be calculated using SPSS software. The Durbin-Watson statistic is always between 0 and 4. A value of 2 means that there is no autocorrelation in the sample, values approaching 0 indicate positive autocorrelation and values toward 4 indicate negative autocorrelation.

Test of Heteroskedasticity

Heteroskedasticity test was applied to analyze the hypotheses of homoskedasticity in the residuals. Base on this hypothesis, residuals in the regression model should contain regular variances. In case they are not regular, the condition can be distinct as heteroskedasticity. In this study, the test for homoskedasticity assumption was conducted by applying White's Test.

Test of Statistical Significance of Regression Coefficients

To test for overall significant of the regression coefficients in OLS regression model, F statistics and R-squared was used. Under null hypothesis, F-test assumed that the regression coefficients

are jointly equal to zero i.e. jointly regression coefficients are not statistically important. The value of F-statistics with its respective p- value was examined for a decision to ensure a decision is reached with respect to null hypothesis at 5 percent importance level. It was important that the value of R-square is high.

3.8 Summary

This chapter outlined the methodology used in the research study. It explained the research design adopted, the data collection instrument and procedures, and the data analysis procedures which outline how the collected data was summarized into meaningful results. The chapter ends with a section on the conceptual and analytical model adopted in the study as well as the diagnostics tests that were conducted. The next chapter covered the data analysis and discussion of the study results.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the study findings and discussion of the results. The study sought to analyze the impact of financial literacy on financial inclusion among small-scale farmers in Trans Nzoia County, Kenya. The data was collected from the small-scale farmers in the various sub-counties within Trans Nzoia County. The analyzed data was presented in tables and figures.

4.2 Response Rate

The study targeted the 384 small-scale farmers in Trans Nzoia County who were issued with questionnaires. The farmers who responded were 288 out of the targeted 384, which represents a 75 percent response rate. The response rate is shown in the table 4.1.

Table 4.1 Response Rate

| Response Rate | Frequency | Percentage |
|--------------------------|------------------|-------------------|
| Responses | 288 | 75 |
| Non-Response | 96 | 25 |
| Total Sample size | 384 | 100.0 |

4.3 Respondents' Profile

The segment presents the background information of those respondents who reacted on the questionnaire of the study. This info was important in accepting as well as categorizing the diverse responses base each respondent's background or profile. The respondents' information captured includes: the gender, age, level of academic qualification and number of years as a farmer.

4.3.1 Gender of the Respondents

This section of the study sought to establish the gender of the respondents who took part in the study. The results are presented in Figure 4.1.

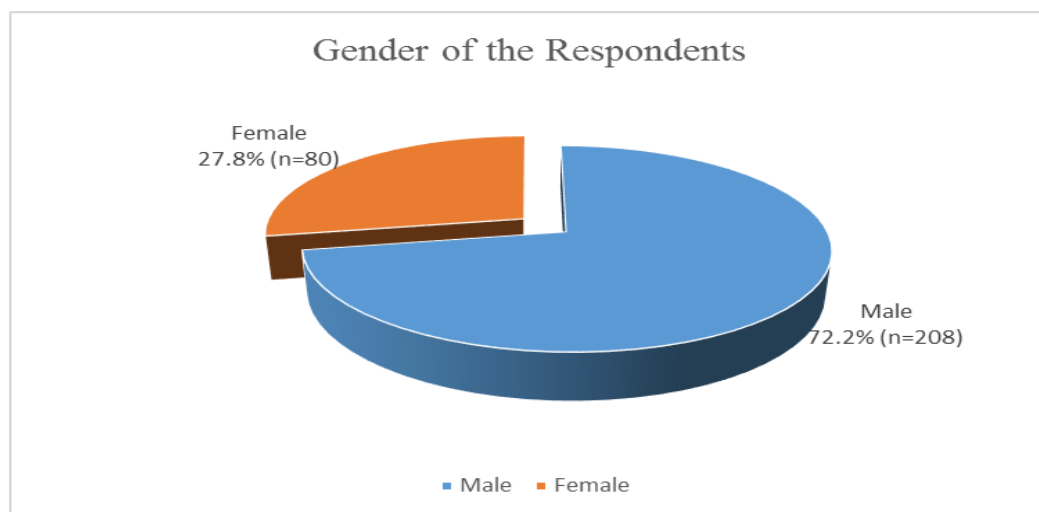


Figure 4.1 Gender of the Respondents

The results in the Figure 4.1 show that a majority of the respondents (72.2%) were male while 27.8% were female. This shows that majority of the small-scale farmers in Trans-Nzoia County were male.

4.3.2 Age of the Respondents

In this section, the respondents were requested to indicate their age. The respondents' age was captured in structured age brackets. The results are presented in Table 4.2.

Table 4.2: Age of the Respondents

| Age Bracket | Frequency | Percent |
|----------------|------------|--------------|
| Below 30 years | 32 | 11.1 |
| 31-40 Years | 80 | 27.8 |
| 41-50 Years | 112 | 38.9 |
| Above 50 Years | 64 | 22.2 |
| Total | 288 | 100.0 |

The study results show that 38.9% of the respondents were aged between 41-50 years, while 27.8% of the respondents were aged between 31-40 years. On the other hand, 22.2% of the respondents indicated to have been above 50 years of age, while 11.1% of the respondents indicated to have been aged below 30 years.

4.3.3 Respondents' Highest Level of Academic Qualification

The respondents were asked to indicate the highest level of academic qualification they had attained. The findings are presented in Figure 4.2.

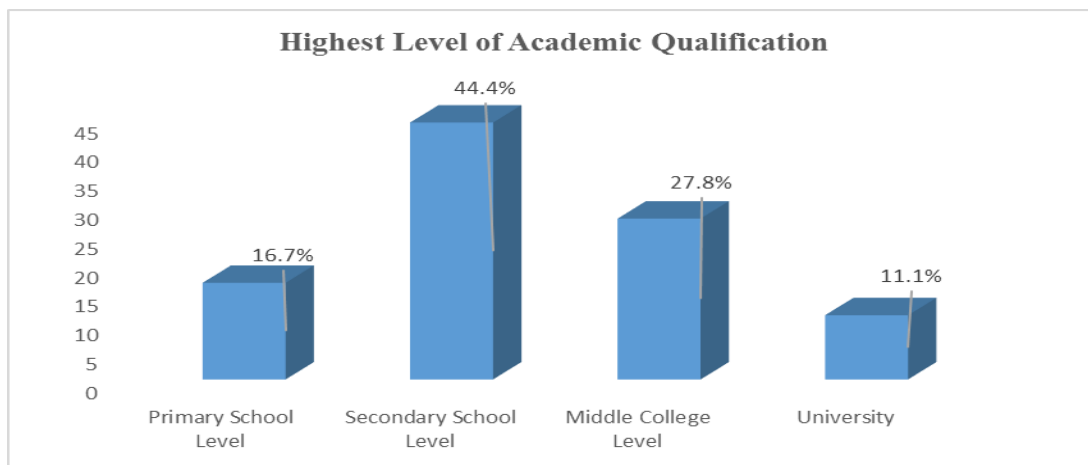


Figure 4.2 Highest Level of Academic Qualification

The study findings show that most of the respondents (44%) (n=128) had reached secondary school level, while 27.8% (n=80) of the respondents had attained a middle college level of academic qualification. On the other hand, 16.7% (n=48) of the respondents had reached primary school level, while 11.1% (n=32) of the respondents had reached university level as their highest level of academic qualification.

4.3.4 Respondents' Number of Years in Farming

The respondents were asked to indicate the number of years they had worked as a farmer. The results are presented in Table 4.3.

Table 4.3 Respondents' Number of Years in Farming

| No. of Years | Frequency | Percent |
|---------------------|------------------|----------------|
| Less than 5 Years | 16 | 5.6 |
| 5-10 Years | 96 | 33.3 |
| 11-15 Years | 48 | 16.7 |
| 16-20 Years | 80 | 27.8 |
| Above 20 Years | 48 | 16.7 |
| Total | 288 | 100.0 |

Most of the respondents (33.3%) indicated to have been a farmer for 5-10 years, while 27.8% of the respondents indicated to have been a working as farmers for 16-20 years. On the other hand, 16.7% of the respondents reported to have been working as farmers for a period between 11-15 years and above 20 years respectively. However, 5.6% of the respondents indicated to have been in farming for a period less than 5 years.

4.4 Summary Statistics

This section presents the summary of results as per the study variables. The section also presents the diagnostic tests conducted on the data used in the study. These results are presented below.

4.4.1 Descriptive Statistics Summary

Results in Table 4.4 present the summary of the results from the descriptive statistics. This includes the mean scores and the corresponding standard deviation for each and every variable.

Table 4.4 Descriptive Statistics Summary

| Variables | N | Mean | Std. Deviation |
|------------------------------|----------|-------------|-----------------------|
| Saving Practices | 288 | 3.68 | 0.977 |
| Debt Management Practices | 288 | 4.03 | 0.754 |
| Financial Planning Practices | 288 | 4.21 | 0.675 |
| Investment Practices | 288 | 4.25 | 0.706 |
| Financial Inclusion | 288 | 3.68 | 0.856 |

The study results show that financial planning practices and debt management practices were majorly being practices by the small scale farmers to a huge extent as shown by the mean scores of 4.21 and 4.03. The small scale farmers also exercised investment practices to a great extent as shown by a mean score of 4.25.

4.4.2 Diagnostic Tests

This section presents the results of the diagnostic tests carried out on the data to test for Multicollinearity, detect the presence of autocorrelation and serial correlation among others. The results are presented below.

Table 4.5 Multicollinearity Coefficients Results

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|-------|----------------------|-----------------------------|------------|---------------------------|--------|-------|-------------------------|-------|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -1.712 | 0.230 | | -7.450 | 0.000 | | |
| | Saving Practices | 0.110 | 0.030 | 0.125 | 3.675 | 0.000 | 0.978 | 1.023 |
| | Debt Management | 0.273 | 0.041 | 0.256 | 6.735 | 0.000 | 0.780 | 1.282 |
| | Financial Planning | 0.824 | 0.050 | 0.623 | 16.509 | 0.000 | 0.795 | 1.258 |
| | Investment Practices | 0.098 | 0.040 | 0.094 | 2.431 | 0.016 | 0.761 | 1.314 |

a Dependent Variable: Financial Inclusion

Table 4.6: Collinearity Diagnostics (a)

| Model | Dimension | Eigen value | Condition Index | Variance Proportions | | | | |
|-------|-----------|-------------|-----------------|----------------------|--------------------|-----------------|--------------------|----------------------|
| | | | | (Constant) | S Saving Practices | Debt Management | Financial Planning | Investment Practices |
| 1 | 1 | 4.971 | 1.000 | .00 | .00 | .00 | .00 | .00 |
| | 2 | .015 | 18.061 | .00 | .88 | .04 | .02 | .04 |
| | 3 | .006 | 28.662 | .03 | .00 | .94 | .06 | .21 |
| | 4 | .005 | 30.728 | .13 | .03 | .02 | .25 | .75 |
| | 5 | .003 | 41.738 | .85 | .08 | .00 | .67 | .00 |

a Dependent Variable: Financial Inclusion

The multicollinearity results in Table 4.5 shows the values of Tolerance are above 0.1 while the corresponding VIF values are less than 10. This implies that there is no multicollinearity problem. The thumb or rule is that Tolerance should be > 0.1 (or $VIF < 10$), for there not to be multicollinearity.

Table 4.7 Test for autocorrelation- Durbin-Watson

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|---------|----------|-------------------|----------------------------|---------------|
| 1 | .825(a) | .680 | .675 | .24904 | 2.332 |

a Predictors: (Constant), investment practices, Saving practices, financial planning, Debt management

b Dependent Variable: Financial Inclusion

Table 4.8 Residuals Statistics

| | Minimum | Maximum | Mean | Std. Deviation | N |
|----------------------|---------|---------|--------|----------------|-----|
| Predicted Value | 2.5647 | 4.7856 | 3.6771 | .36047 | 288 |
| Residual | -.5943 | .6449 | .0000 | .24730 | 288 |
| Std. Predicted Value | -3.086 | 3.075 | .000 | 1.000 | 288 |
| Std. Residual | -2.386 | 2.590 | .000 | .993 | 288 |

a Dependent Variable: INCLUSIO

As shown in Table 4.7, the value of Durbin-Watson is 2.332. The Durbin-Watson statistic is always between 0 and 4. A value of 2 means that there is no autocorrelation in the sample. Values approaching 0 indicate positive autocorrelation and values toward 4 indicate negative autocorrelation. The value of 2.332 therefore implies that there is no autocorrelation in the data.

4.5 Saving Practices and Financial Inclusion

The study sought to investigate the saving practices and their impact on financial inclusion among small-scale farmers in Trans Nzoia County. The results are presented below.

4.5.1 Saving Practices

The respondents were requested to indicate their level of agreement with the various statements regarding saving practices and financial inclusion. A five point likert scale was used to interpret the responses whereby the scores of “Strongly disagree” and “Disagree” were represented by mean score, equivalent to likert scale ($1 \leq \text{disagree} \leq 2.5$). The scores of ‘Neutral’ were equivalent to 2.6 to 3.5 on the likert scale ($2.6 \leq \text{Neutral} \leq 3.5$) The scores of “Agree” and “Strongly agree” were equivalent to 3.6 to 5.0 on the likert scale ($3.6 \leq \text{Agree} \leq 5$). The results are presented in Table 4.9.

Table 4.9 Saving practices

| Statements on Saving Practices | Mean | Std. Deviation |
|--|-------------|-----------------------|
| Save out each payment received | 3.06 | 1.161 |
| Frequently set aside money for future needs/wants | 3.61 | 1.115 |
| save a specific percent of income from farm proceeds | 3.91 | 0.848 |
| Increase savings after receive the income increases | 4.14 | 0.784 |

The respondents agreed to have been increasing their savings after realizing an increase in income and that they would save a specific percentage of income from farm proceeds, as shown by the mean scores of 4.14 and 3.91 respectively. The respondents also agreed to have been frequently setting aside money for future needs/wants, as shown by a mean score of 3.61. However, the respondents were neutral to the statement regarding saving each of the payment they received, as shown by a mean score of 3.06.

4.5.2 Extent to Which the Saving Practices Enhanced Access and Use of Financial Services

The respondents were asked to indicate the extent to which saving practices enhanced access and use of financial services. The results are presented in Table 4.10.

Table 4.4 Saving Practices on Access and Use of Financial Services

| | Frequency | Percent |
|-------------------|------------------|----------------|
| Very great extent | 103 | 35.8 |
| Great extent | 158 | 54.9 |
| Moderate extent | 27 | 9.4 |
| Total | 288 | 100.0 |

Majority of the respondent (54.9%) indicated that the saving practices influenced the access and use of financial practices to a great extent, while 35.8% of the respondents indicated that the saving practices affected the access and use of financial services to a very great extent. On the other hand, 9.4% of the respondents reported that the saving practices influenced the access and use of financial practices to a moderate extent.

4.6 Debts Management Practices and Financial Inclusion

The study sought to investigate the debt management practices and their impact on financial inclusion among small-scale farmers in Trans Nzoia County.

4.6.1 Debt Management Practices

The respondents were requested to indicate their level of agreement with various statements regarding debt management practices. The results are presented in Table 4.11.

Table 4.11 Debt Management Practices on Access and Use of Financial Services

| Statements | Mean | Std. Deviation |
|---|-------------|-----------------------|
| Borrow when necessary and for investment only | 4.01 | 0.831 |
| Pays bills on time | 3.94 | 0.740 |
| Repays the money owed to others on time | 4.13 | 0.692 |

The respondents agreed to have been repaying the money owed to others on time and that they only borrowed when necessary and for investment only, as shown by the mean scores of 4.13 and 4.01 respectively. The respondents further to have been paying the bills on time, as shown by the mean score of 3.94.

4.6.2 Extent to Which the Debt Management Practices Enhanced Access and Use of Financial Services

The respondents were requested to indicate the extent to which debt management practices enhanced access and use of financial services. The results are presented in Table 4.12.

Table 4.12 Debt Management Practices on Access and Use of Financial Services

| Extent | Frequency | Percent |
|-------------------|------------------|----------------|
| Very great extent | 108 | 37.5 |
| Great extent | 162 | 56.3 |
| Moderate extent | 18 | 6.3 |
| Total | 288 | 100.0 |

Majority of the respondents (56.3%) indicated that debt management practices affected the access and use of financial services to a great extent, while 37.7% of the respondents indicated that the debt management practices affected the access and use of financial services to a very great extent. However, 6.3% of the respondents indicated that the debt management practices influenced the access and use of financial services to a moderate extent.

4.7 Financial Planning Practices and Financial Inclusion

The study sought to investigate the debt management practices and their impact on financial inclusion among small-scale farmers in Trans Nzoia County.

4.7.1 Financial Planning Practices

The respondents were requested to indicate their level of agreement with various statements regarding financial planning practices. The results are presented in Table 4.13.

Table 4.13 Financial Management Practices on Access and Use of Financial Services

| Statements | Mean | Std. Deviation |
|--|-------------|-----------------------|
| Budgets for money/ income received from the farm proceeds | 4.29 | 0.640 |
| Keep a close personal watch on financial affairs | 4.35 | 0.619 |
| Before buying something, carefully considers its affordability | 4.30 | 0.620 |
| Generally achieve money management goals | 3.89 | 0.823 |

The study results in Table 4.13 show that the respondents agreed that they were keeping a close personal watch on financial affairs (mean score = 4.35). The respondents also agreed that they considered the affordability of anything before buying them (mean score = 4.30). The respondents also agreed they were budgeting for the money/income received from the farm proceeds and had generally achieved money management goals, as shown by the mean scores of 4.29 and 3.89 respectively.

4.7.2 Extent to Which the Financial Planning Practices Enhanced Access and Use of Financial Services

The respondents were requested to indicate the extent to which financial planning practices enhanced access and use of financial services. The results are presented in Table 4.14.

Table 4.14 Financial Planning Practices on Access and Use of Financial Services

| Extent | Frequency | Percent |
|------------------|------------------|----------------|
| Very huge extent | 88 | 30.6 |
| Huge extent | 150 | 52.1 |
| Moderate extent | 41 | 14.2 |
| Small extent | 9 | 3.1 |
| Total | 288 | 100.0 |

A number of the respondents (52.1%) indicated that financial planning practices affected the access and use of financial services to a great extent, while 30.6% of the respondents reported that the financial planning practices influenced the attainment as well as use of financial services to a very great extent. On the other hand, 14.2% of the respondents indicated that financial planning practices affected the access and use of financial services to a moderate extent while 3.1% of the respondents indicated that the financial planning practices affected the access and use of financial services to a small extent.

4.8 Investment Practices and Financial Inclusion

The study sought to investigate the investment practices and their impact on financial inclusion amongst small-scale farmers in Trans Nzoia County.

4.8.1 Investment Practices

The respondents were requested to indicate their level of agreement with the diverse statements concerning investment practices. The results are presented in Table 4.15.

Table 4.55 Investment Practices

| Statements on Investment Practices | Mean | Std. Deviation |
|---|-------------|-----------------------|
| Aware of various viable investments one can make an investment on | 4.34 | 0.643 |
| Spread money across more than one type of investment | 4.06 | 0.837 |
| Invest money from farm income for the long term. | 4.36 | 0.637 |

The results in Table 4.15 show that the respondents agreed to be aware of various viable investments one could make an investment on (mean score = 4.34). The respondents also agreed that they invested money from farm income for the long term; as shown by the mean scores of 4.36. The respondents further agreed that they spread money across more than one type of investment as shown by a mean score of 4.06.

4.8.2 Extent to Which the Investment Practices Enhanced Access and Use of Financial Services

The respondents were asked to indicate the extent to which investment practices enhanced access and use of financial services. The results are presented in Table 4.16.

Table 4.16 Investment Practices on Access and Use of Financial Services

| Extent | Frequency | Percent |
|------------------|------------------|----------------|
| Very huge extent | 103 | 35.8 |
| Huge extent | 158 | 54.9 |
| Moderate extent | 27 | 9.4 |
| Total | 288 | 100.0 |

Majority of the respondents (54.9%) indicated that the investment practices affected the access and use of financial services to a great extent while 35.8% of the respondents indicated that the investment practices influenced the access and use of financial services to a very great extent. However, 9.4% of the respondents indicated that the investment practices affected the access and use of financial services to a moderate extent.

4.9 Financial Inclusion

In this section, the study sought to establish the extent to which the small-scale farmers used and accessed the broad range of financial products and services.

4.9.1 Whether Respondents had an Account With Any Financial Institution

The respondents were asked to indicate whether they had either a current, saving or loan account with the any financial institutions. The results are presented in Figure 4.2.

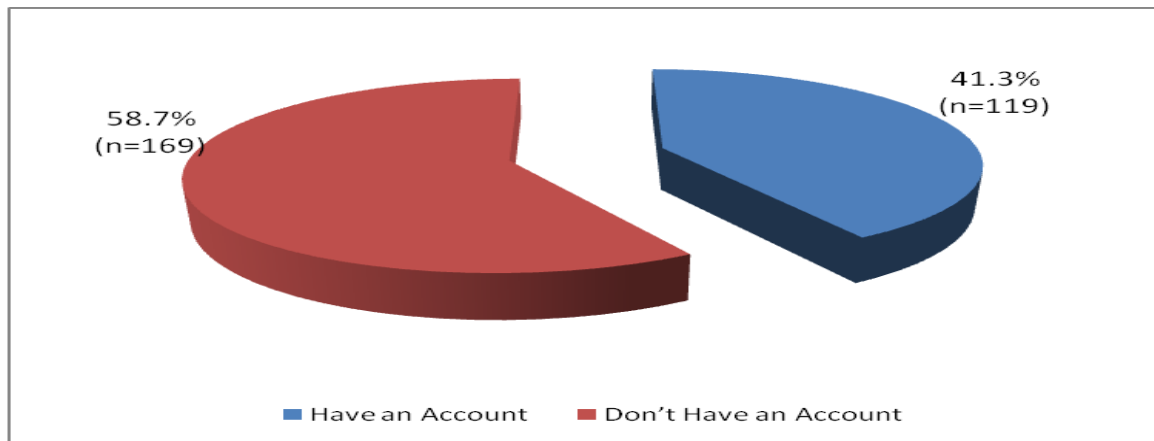


Figure 4.3 Availability of an Open Account with ant Financial Institution

The study findings in Figure 4.3 show that majority of the respondents (58.7%) indicated did not have either a current, saving or loan account with financial institutions. Only 41.3% of the respondents indicated that they had an account with a financial institution.

4.9.2 Respondents' Frequency of Accessing Financial Products/Services in a Month

The respondents were requested to indicate the number of times they accessed financial products /services in a given month. The results are presented in Table 4.17.

Table 4.17 Frequency of Accessing Financial Products/Services in a Month

| Frequency | Frequency | Percent |
|-----------|-----------|---------|
|-----------|-----------|---------|

| | | |
|-------------------|------------|-------------|
| Once | 164 | 56.9 |
| Twice or Thrice | 80 | 27.8 |
| Four-Five | 20 | 6.9 |
| More than 5 times | 14 | 4.9 |
| Total | 278 | 96.5 |

Majority of the respondents indicated to have been accessing financial products/services for financial institutions once a month, while 27.8% of the respondents indicated to have been accessing the financial products/services from financial institutions twice or thrice a month. On the other hand, 6.9% of the respondents indicated to have been accessing the financial products/services from financial institutions for four to five days a month, while 4.9% of the respondents reported to have been accessing the financial products for more than five times a month.

4.9.3 Access and Use of Financial Services by Farmers

The respondents were requested to show the frequency in which they accessed the various financial services. A five point likert scale was used to interpret the responses where scores of 1 is never, 2 is almost never, 3 is occasionally/sometimes, 4 is almost every time and 5 is every time. The results are presented in Table 4.18.

Table 4.18 Financial Services Accessed by the Farmers

| Financial Services | Mean | Std. Deviation |
|---|-------------|---------------------------|
| Savings services | 3.07 | 0.800 |
| Depositing/Withdrawing Cash | 4.10 | 0.765 |
| Loans services | 3.50 | 1.079 |
| Mobile banking (including mobile phones financial services such as Mpesa) | 4.04 | 0.780 |

The respondents reported to have been accessing depositing/withdrawing services and mobile banking services all the time, as shown by the mean scores of 4.10 and 4.04 respectively. However, the respondents revealed to have been accessing the loans and saving services occasionally, as shown by the mean score of 3.50 and 3.07 respectively.

4.10 Financial Literacy and Financial Inclusion

A multivariate regression model was used to establish the relationship between the financial literacy and financial inclusion amongst small-scale farmers in Trans Nzoia County. The study wants to determine the correlation involving financial inclusion and the predictors: investment practices, saving practices, financial planning, and debt management.

4.10.1 Results of Model of Goodness of Fit

This section presents the results of model of goodness of fit. The goodness of fit of a statistical model describes how well it fits a set of observations. The results are presented in Table 4.19.

Table 4.19: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|----------|----------|-------------------|----------------------------|
| 1 | 0.825(a) | 0.680 | 0.675 | 0.24904 |

a Predictors: (Constant), investment practices, Saving practices, financial planning, Debt management

The regression results in Table 4.19 show an R value of 0.825 which implies that there is high relationship between the variables. The R-Squared (coefficient of determination) explains how well the model predicts the observation; is a statistical measure of how close the data is to the fitted regression line. The Value of R square was 0.675. This implies that the predictors (investment practices, saving practices, financial planning, debt management) explained 67.5% of financial inclusion among small-scale farmers in Trans Nzoia County. The remaining percentage of 32.5% can be explained by other variables/predictors not included in the study.

4.10.2 Results of ANOVA

The Analysis of Variance (ANOVA) results provide information about levels of variability within a regression model and form a basis for tests of importance. The results are presented in Table 4.20.

Table 4.20: ANOVA Results

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|--------------|----------------|------------|-------------|---------|----------|
| 1 | Regression | 37.292 | 4 | 9.323 | 150.326 | 0.000(a) |
| | Residual | 17.551 | 283 | 0.062 | | |
| | Total | 54.844 | 287 | | | |

a Predictors: (Constant), investment practices, Saving practices, financial planning, Debt management

b Dependent Variable: Financial Inclusion

The ANOVA results in Table 4.20 shows an F- value ($F = 150.326$), which was significant ($p\text{-value} = 0.001$). This indicates that the regression model has a 0.001 (0.1%) probability of giving a wrong prediction. This means that the regression model has a confidence level of over 95% therefore, high consistency of the outcomes.

4.10.3 Estimated Model

Table 4.21: Coefficients Results (a)

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|----------------------|-----------------------------|------------|---------------------------|--------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -1.712 | .230 | | -7.450 | 0.000 |
| | Saving practices | 0.110 | .030 | 0.125 | 3.675 | 0.000 |
| | Debt management | 0.273 | .041 | 0.256 | 6.735 | 0.000 |
| | Financial planning | 0.824 | .050 | 0.623 | 16.509 | 0.000 |
| | Investment practices | 0.098 | .040 | 0.094 | 2.431 | 0.016 |

a Dependent Variable: Financial Inclusion

The regression co-efficient results show that there is an optimistic as well as important correlation between saving practices and financial inclusion among small-scale farmers in Trans Nzoia County as shown by $\beta = 0.110$, $p=0.001<0.05$. The results also show an optimistic as well as important correlation between debt management and financial inclusion as shown by $\beta = 0.273$, $p= 0.001<0.05$. The regression results further shows that there is an optimistic as well as important correlation between financial inclusion and financial planning ($\beta =0.824$, $p = 0.001<0.05$); investment practices ($\beta = 0.098$, $p= 0.016<0.05$).

From the regression results, it can be deduced that all the predictors, that is; investment practices, saving practices, financial planning, and debt management had a positive and significant impact on financial inclusion amongst small-scale farmers in Trans Nzoia County.

4.11 Discussion

The study found out that the small-scale farmers in Trans-Nzoia Count saved some income from the farm proceeds for future needs/wants. The famers did not manage to save out each payment income they received but they increased their savings whenever they realized an increase in income. The study found out that the saving practices among small-scale farmers influenced the access and use of financial practices to a great extent. These findings condoned the findings of Bakker (2011) who revealed that one of the concepts of financial literacy that is vital is how to responsibly save and make informed choices about the financial.

On the debt management practices, the study found out that the small-scale farmers in Trans Nzoia County repaid the money owed to others on time and that they only borrowed when necessary. The farmers also agreed that they paid their bills on time. This shows that the small-scale farmers in Trans Nzoia County had low debt levels. These findings are in line with those

Remmele (2016) who revealed that financial literacy among small scale farmers leads to low debt levels. The study findings further shows that debt management practices among small-scale farmers influenced the access and use of financial services to a large scope. These results agreed with Nyamute and Maina (2011) findings, on effect of financial literacy on personal financial management applications and found out that the financially literate had an enhanced approval as well as application of the financial management practices.

On financial planning practices, the study found out that the respondents were keeping a close personal watch on financial affairs. The small-scale farmers were also cautious of their spending and they budgeted for the income they received from the farm proceeds. The small-scale farmers were keen to achieve money management goals. Financial planning practices were found to have a positive influence on the access and use of financial services to a great extent. According to Lusardi and Tufano (2009) financial literacy has an impact on financial behavior whereby low financial literacy persons are susceptible to financial management problems. Financial education among small-scale farmers helps them to make sound financial decisions.

On the investment practices, the study found out that there is an optimistic as well as statistically important correlation exists between investment practices and financial inclusion amongst small-scale farmers in Trans Nzoia County. The small-scale farmers indicated that they were aware of various viable investments they could venture on; and they invested money from farm income for the long term. Investment practices among the small farmers were found to influence the access and use of financial services to a great extent. The findings are in agreement with those of Wambugu and FSD Kenya (2008) who revealed that is that financial literacy among small scale

farmers is beneficial to them since it helps them use financial institutions' products and services to achieve their financial objectives, plan ahead and prudently invest.

4.12 Summary

This chapter presented the study's results as well as findings in order to answer the research problem/objective. The data was evaluated by the use of the descriptive as well as inferential statistics. From the descriptive results, the study found out that saving practice, debt management practices, financial planning practices and investment practices were found to have a great influence on financial inclusion amongst small-scale farmers in Trans Nzoia County. The regression analysis findings also show that investment practices, saving practices, financial planning, and debt management had a positive and significant impact on financial inclusion among small-scale farmers in Trans Nzoia County. The subsequent chapter shows the synopsis of the key findings, the conclusions and the study recommendations.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter gives a synopsis of the research findings, conclusion, as well as recommendations of the study according to its objectives. This involves a synthesis of main issues of the objectives as deduce from the entire research.

5.2 Summary of Findings

With regards to the influence of saving practices on financial inclusion amongst small-scale farmers in Trans Nzoia County, the study found out that the respondents would save a specific percentage of income from farm proceeds and they increased their savings whenever they realized an increase in income. The respondents also agreed to have been frequently setting aside money for future needs/want. On overall, the respondents agreed that saving practices among small-scale farmers influenced the access and use of financial practices to a great extent. The regression outcomes indicate that an optimistic as well as statistically important correlation exists between savings practices and financial inclusion amongst small-scale farmers in Trans Nzoia County.

The debt management practices had a positive impact on financial inclusion amongst small-scale farmers in Trans Nzoia County. The study found out that respondents have been repaying the money owed to others on time and that they only borrowed when necessary and for investment only. The respondents also agreed to have been paying the bills on time. On overall, majority of the respondents revealed that debt management practices among small-scale farmers influenced the access and use of financial services to a great extent. The regression results show a positive

and significant relationship between debt management and financial inclusion among small-scale farmers in Trans Nzoia County.

By focusing on the effects of financial planning practices on financial inclusion amongst small-scale farmers in Trans Nzoia County, the study found out that the respondents were keeping a close personal watch on financial affairs. The small-scale farmers were also cautious of their spending and they budgeted for the income they received from the farm proceeds. The small-scale farmers were keen to achieve money management goals. On overall, majority of the respondents revealed that financial planning practices among small-scale farmers influenced the access and use of financial services to a great extent. The regression outcomes indicate that an optimistic as well as important correlation exists between debt management and financial inclusion amongst small-scale farmers in Trans Nzoia County.

On the investment practices and financial inclusion, the study found out that the respondents were aware of various viable investments one could make an investment. The respondents also indicated that they invested money from farm income for the long term. The respondents also agreed to have been spending money across more than one type of investment. On overall, a big number of the respondents shown that investment practices influenced the access and use of financial services to a great extent. The regression outcomes indicate that an optimistic as well as important correlation exists between investment practices and financial inclusion amongst small-scale farmers in Trans Nzoia County.

The study results show that small-scale farmers in Trans Nzoia County greatly used and accessed services such as deposit and withdrawal financial services as well as mobile banking services

including mobile phones financial services such as Mpesa. However, the respondents also revealed that they only used or accessed loans services and saving services, occasionally.

5.3 Conclusion

The study concludes that that an optimistic as well as important correlation exist between saving practices and financial inclusion. Farmers are keen to save and set aside some money from the income they get from farm proceeds. However, they were unable to save frequently due to small incomes. Much of the income they got from the farm proceeds ended up being consumed. The farmers would save to a great extent when they realized an increase in the income from farm proceeds. As a result they used the financial services to save for future needs.

An optimistic as well as important correlation between debt management as well as financial inclusion among small-scale farmers was established through the research. An increase in debt management practices would significantly increase use and access of financial services by small-scale farmers. These debt management practices includes: repaying money owed to others on time, paying the bills on time and borrowing only when necessary.

Finally, investments practices and financial planning practices had a positive and significant relationship with financial inclusion among small-scale farmers. The study shows that the farmers aware of the various investment options and they invested in more than one type of investment. Knowledge of investment options fully translated to knowledge on financial services which encouraged the small-scale farmers to use and access financial services for services such as savings and for loans to advance their investments.

5.4 Recommendations

The study recommend that the various micro finance institutions and government agencies should organize financial education and awareness programs to small scale farmers on saving practices, debt management, financial planning and investment practices. These institutions should also create the awareness among the small-scale farmers on the important of opening saving accounts with the various financial institutions and mobile banking in the attempt to develop a saving culture that would boost their accessibility to loans.

Through the study, the small scale farmers are encouraged to take advantage of the government programs such the UWEZO fund (with low interest rates compared to many bank loans) that have been availed by the Kenyan government as a flagship program for the vision 2030 whose goal is to empower women, youth as well as people living with disabilities through their ease to access money to encourage businesses as well as enterprises even at the constituency level.

In order to enhance financial literacy and inclusion, the study recommends the incorporation of financial studies into the curriculum of the learning institutions starting from primary schools in order to create a culture of financial knowledge amongst the in their early life. This is to the knowledge that Business studies as a subject was remove from primary school curriculum and is an elective at secondary level. Therefore, it should be re-introduced at primary school and be a compulsory subject for the first two years of secondary education. The curriculum should teach concepts on debt management, financial planning, budgeting, investment decisions and awareness on efficient utilization of financial products/ services.

Finally, the study emphasized the need for an urgency designing of a program on fiscal management for small-scale farmers by the government as well as other related institutions like

Educational Institutions. This would help enhance a complete understanding of the benefits of financial inclusion. The program would make sure that there is complete as well as standardized info conveyed to farmers. Persuasion as well as additional advice should then be provided after availing financial inclusion products/services to verify possible shock on the financial growth of the farmers.

5.5 Recommendation for Further Study

The study was limited to only the small scale farmers in Trans-Nzoia County, so as to enhance the external force as far as the research findings generalization are concern; it has been recommended the above study should be simulated among the small-scale farmers drawn from other Counties in Kenya.

The variables under study only explain 65% of the relationship between financial inclusion and financial literacy; therefore, other scholars should investigate what other variables affect financial inclusion among small-scale farmers.

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Appendix

Instructions: Please read the answer the questions as appropriately as possible. It is advisable that you answer or fill in each section as provided. Tick (√) where appropriate.

Section I: Demographic Information

1. Indicate your gender.

Male [] Female []

2. Indicate your appropriate age bracket.

Below 30 years [] 31-40 Yrs [] 41-50 Yrs []

Above 50 Yrs []

3. Kindly indicate your highest level of academic qualification.

Primary School Level [] Secondary School Level []

Middle College Level [] University []

4. How many years have you been a farmer?

a) Less than 5 Years [] b) 5-10 Years []

c) 11-15 Years [] d) 16-20 Years []

d) Above 20 Years []

Section B: Saving Practices

5. To what extent do you agree with the following statements on saving practices and financial inclusion? Use a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is Neutral, 4 is agree and 5 is Strongly agree

| Statements on Saving Practices | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| I save out of each payment I receive | | | | | |
| I frequently set aside money for future needs/wants | | | | | |
| I save a specific percent of my income from the farm proceeds | | | | | |
| I increase my savings when I receive the income increases | | | | | |

6. To what extent has the saving practices enhanced your access to the use financial services?

- Very great extent Great extent
 Moderate extent Small extent
 Not at all

Section C: Debts Management Practices

7. To what extent do you agree with the following statements on debt management practices? Use a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is Neutral, 4 is agree and 5 is Strongly agree

| Statements on Debts Management | 1 | 2 | 3 | 4 | 5 |
|--|----------|----------|----------|----------|----------|
| I only borrow when necessary and for investment only | | | | | |
| I pay my bills on time | | | | | |
| I repay the money I owe on time | | | | | |

8. To what extent do debt management practices enhanced your access to the use financial services?

- Very great extent [] Great extent []
 Moderate extent [] Small extent []
 Not at all []

Section D: Financial Planning Practices

9. To what extent do you agree with the following statements on financial planning practices? Use a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is Neutral, 4 is agree and 5 is Strongly agree

| Statements on Financial Planning | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| I budget for my money/ income I receive from the farm proceeds | | | | | |
| I keep a close personal watch on my financial affairs | | | | | |
| Before I buy something I carefully consider whether I can afford it | | | | | |
| I generally achieve my money management goals | | | | | |

10. To what extent do financial planning practices enhanced your access and use of financial services?

- Very great extent [] Great extent []
 Moderate extent [] Small extent []
 Not at all []

Section E: Investment Practices

11. To what extent do you agree with the following statements on investment practices and financial inclusion? Use a scale of 1 to 5 where 1 is strongly disagree, 2 is disagree, 3 is Neutral, 4 is agree and 5 is Strongly agree

| Statements on Investment Practices | 1 | 2 | 3 | 4 | 5 |
|--|----------|----------|----------|----------|----------|
| I know about various viable investments I can make an investment on. | | | | | |
| I spread my money across more than one type of investment | | | | | |
| I invest money from my farm income for the long term. | | | | | |

12. To what extent do investment practices enhanced your access and use of financial services?

- Very great extent [] Great extent []
Moderate extent [] Small extent []
Not at all []

Section F: Financial Inclusion

13. Do you have a current/saving/loan account with any financial institution?

- Yes [] No []

14. How many times do you access financial products/services in a month?

- Once [] Twice or Thrice [] Four-Five [] More than 5 times []

15. To what extent do you access and use any of the following financial services? Use a scale of 1-5 where 1 is Never, 2 is Almost Never, 3 is Occasionally/Sometimes, 4 is Almost Every time and 5 is Every Time

| Financial Services I access and Use | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| Savings services | | | | | |
| Depositing/Withdrawing cash | | | | | |
| Loans services | | | | | |
| Mobile Banking (including mobile phones financial services such as Mpesa) | | | | | |

16. Which other financial services do you access and use?

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THANK YOU FOR YOUR PARTICIPATION