

**INFLUENCE OF SOCIO-ECONOMIC FACTORS ON THE
UPTAKE OF AGRICULTURAL CREDIT BY MAIZE FARMERS
IN KWANZA SUB-COUNTY, KENYA**

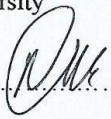
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**A Research Project Report Submitted in partial fulfilment of the
requirements for the award of the Degree of Master of Arts in Project
Planning and Management, University of Nairobi**

2019

DECLARATION

This Research Project Report is my original work and has not been submitted any other university


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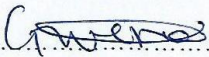
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DEDICATION

I dedicate this work to my wife Faith Nanjala, my son and daughter for their encouragement and support.

ACKNOWLEDGEMENT

I would wish to acknowledge the Dean for the School of Open and Distance Learning, Dr. Dorothy Kyalo for guiding activities in the School of Postgraduate where I dreamt to undertake a Master Degree in Project Planning and Management.

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Lastly, I thank all the respondents who took part in this study because their views, opinions and facts given formed the basis on which this study was concluded. God Bless you all

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LIST OF ABBREVIATIONS AND ACRONYMS

CBK:	Central Bank of Kenya
UNDP:	United Nations Development Program
USA:	United States of America
FAO:	Food and Agriculture Organization
GDP:	Gross Domestic Product
GOK:	Government of Kenya
IFAD:	International Fund for Agricultural Development
SACCOs:	Savings and Credit Cooperative Organization
SPSS:	Statistical Package for Social Science
KNBS:	Kenya National Bureau of Statistics

ABSTRACT

Agricultural loans if well utilized can boost maize productivity in farms and overall food security in the country. Despite commercial banks and other financial institutions established with the principle service of offering loans, access to agricultural loans to many maize farmers in Kenya is still limited. This study sought to investigate influence of socio-economic factors on uptake of agricultural loans by maize farmers in Kwanza Sub-County, Trans-Nzoia County. Specifically, the study determined how farmers' income, loaning policy, loan experience and land ownership rights influenced uptake of agricultural loans by Maize Farmers. This Study was anchored on Signaling Theory. Descriptive survey design was adopted for this study. The target population were 5 crop extension officers, 10 credit managers and 14631 maize farmers spread across all the 4 wards making up Kwanza sub-county. A sample of 384 maize farmers was considered. Stratified sampling method was used to collect various characteristics of farmers in the four wards and systematic sampling was used to refine the sampling frame. The researcher used questionnaires and interviews to collect data. Data was collected by administering questionnaires to maize farmers and holding face-face interviews with Credit managers and Crop Extension Officers. Qualitative data collected was analyzed using thematic analysis method. Quantitative data was analyzed using SPSS where descriptive statistics inform of frequencies and percentages was presented in tables. Quantitative data was also analyzed using inferential statistics where linear regression was used as a statistical tool to establish the association between variables at 0.05 level of confidence. In the findings, Loan experience and awareness had a great influence on uptake of agricultural loans compared to farmers' income, loaning policy and land ownership rights. Loaning policy, farmers' income and land ownership rights influenced uptake of agricultural loans in that order and this was determined by the beta coefficients (strength of correlation) between the independent and independent variable. Notably, 80.2% of the respondents observed that they would never apply for financial credit in the future because of the bad experience they had. Further, 70.6% maize farmers observed that they were auctioned by financial institutions for failing to repay their loans in full, they were discouraged to secure loans in future. The majority, 98.9% indicated that interest rates charged on loans made them to shy away from securing financial credit. In another case, 97.2% supported the fact that banks attached hidden charges on loans hence making maize farmers to shy away from securing financial credit. Regarding income, 65.4% of maize farmers did not have an alternative economic activity that generated more income, they relied only on maize farming. In the findings 61.2% respondents stated that they practiced maize farming in a family land, family lands were hardly used as use a collateral to secure financial credit. It was recommended that financial institutions should create awareness to maize farmers to enable them make informed decision before securing loans. the government should review the interest cap act to allow market forces of demand and supply to determine interest rates. Central banks should monitor the practices of commercial banks to prevent restrictive policies on maize farmers. The government should give title deeds and register all farmers to allow them secure loans easily from banks.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally, agricultural sector is considered a key pillar in economic growth and sustainable development (World Bank, 2013). The sector ensures that there is food security and regular income generation among many households across the world (Miller, 2010). Further, as reported by Auma and Mensah (2014), agribusiness has recently attracted a significant number of youth especially in developing countries thus helping to create employment opportunities for them. However, maize production in sub-Saharan countries is currently facing serious challenges such as low investments, pest infestation, low rainfall, sub-division of land preference to high value crops (UNDP, 2017).

United States of America contributes nearly 35% of total world maize harvest making it a single largest producer in the whole world. Maize productivity is 9.6 tonnes per ha which is twice the global mean of 4.92 tonnes per ha. Therefore, maize production investment is a major contributor to the economy of United States (USA Department of Agriculture, 2017).

In Africa, the average productivity is 2.45 tonnes per ha which is nearly half the recommended 4.92 tonnes per ha. Maize in Africa contributes 38% of the continental basket and \$ 4 billion to the agricultural GDP. It also contributes more than 50 million jobs both in the farm and processing industries (FAO, 2017). Maize output per acre in Africa according to Zuri (2011) has recently fallen in spite of major improvements in technologies. The situation has been worsened by prolonged droughts in most African states making it difficult to attain food security targets (Auma & Mensah, 2014).

In Kenya, maize is treated as a staple food and is grown in nearly 75% of arable farms. The average production currently stands at 2.7 tonnes per ha. The per capita consumption is about 97.9kg per annum which translate into about 32 million bags of maize. However, in the past 4 years, maize production in Kenya has stagnated at 27 million bags making the government to import to fill the deficit (GOK Department of Agriculture, 2017). Further, over 90% of rural population depends on maize produce as a source of livelihood (Auma & Mensah, 2014).

In 2010, Kenya recorded a significant increase in maize production as a result of implementation of economic stimulus program, input subsidy and distribution program, and adoption of national land policy. During the implementation of these programs, spending on agriculture by the national government rose significantly from 3.8% to 7.1% of national budget. However, from 2013, immediately after introduction of county systems of governments, expenditure on agriculture started declining and maize yields have either gone down or stagnated in most growing areas (KNBS, 2017).

Maize production in Kenya is highly dominated by smallholder farmers. Data from IFAD report (2016) show that smallholder farmers account for over 70% of the total annual maize production in Kenya. Despite of smallholder potential in maize farming, these farmers face a myriad of challenges that deter productivity and growth. Key challenges facing them include limited access to ready markets, inability to access formal financial services and heavy post-harvest losses due to poor storage facilities (Salami, 2011).

Inability to access formal credit services is often considered a major obstacle which globally, virtually all maize farmers face. Kenyan smallholder farmers are not able to access agricultural loans to facilitate acquisition of fertilizers, certified seeds, pesticides or use of modern technologies. Although there are many sources of agricultural credits such as commercial banks,

SACCOs, micro-finances maize especially smallholders continue to find it difficult to secure loans (Salami, 2011).

Despite commercial banks being major financiers of agricultural projects in terms of credit extension to farmers in developed countries, the situation is different in Kenya. In a study conducted by Bee (2017), 52% of agricultural financing in Kenya came from informal sources; 30% from SACCOs and 18% from commercial banks and micro-finances. Fewer banks were willing to offer credit facilities to agriculture in the country.

Financial institutions play an important role in agriculture by giving out loans. Improving smallholder farmers 'credit accessibility has been deemed as way of ensuring economic development and poverty alleviation. As argued by Auma and Mensah (2014), credit access plays a key role in lessening farmers of challenge faced in acquiring fertilizers, seeds and land preparation. This is believed to advance the welfare of poor smallholder maize farmer.

There is ongoing debate among policy makers and scholars whether it's necessary to lend to the low income groups. According to Nawai and Shariff (2010), these groups are often disqualified from accessing credit facilities for some reasons; inadequate collateral to secure their loans, unpredictable income, high unnecessary transaction costs and high illiteracy. Specifically, banks have had a tendency of applying stringent requirements which a common smallholder farmer cannot meet. For instance prove of extensive collateral, sound credit history and strict accounting records.

As Auma and Mensah (2014) reported poor rural dwellers are disadvantaged by inability to obtain formal credit facilities. They emphasized that commercial banks are unapproachable by poor farmers and if they decide to offer loans to them, they dictate how it is supposed to be used ignoring the demand aspect. Wolter (2010) argued that banks have always had negative

perception on issuing agricultural loans. Further, UNDP (2016) reported that banks consider agriculture as one of the most risky venture due to unpredictable weather conditions and frequent political interference in agricultural the sector. Banks also cite lack of infrastructure in the sector, lack of collaterals and difficulties in formulating models and products to engage farmers. Because of these predicaments as Salami (2011) put it, most smallholder farmers depend on loans extended to them by relatives, friends and informal money lenders. As a consequence, maize production in the country has never been adequate (UNDP, 2017).

In Kenya, economic and social policies discourage farmers to undertake initiatives to invest heavily in agribusiness. The motivation and the capacity to take huge risk investing in agriculture depend mainly on the farmers' guarantee of adequate amount of returns for their livelihoods. Consequently, farmers often spread their resources so as to achieve regular income and food security. Agricultural loans have been proven important since it facilitates agribusiness diversification through funding all farming activities (Wolter, 2010).

Agricultural loans have been taken over the years as one of the best strategy in achieving food security and reducing global poverty. Agricultural loans encourage economic development because the credit given is supposed to be utilized to fund various investments in farming or related activities to give profits. As Nawai and Shariff (2010) argued, agricultural loaning is a crucial strategy in achievement of sustainable development goals; eradication of extreme poverty and hunger; and promoting better global financial systems to gather for the needs of the poor. Further, Auma and Mensah (2014) submitted that agricultural loaning is an important circumstantial aspect with strong influence on the attainment of sustainable development goals. Poor farmers can only make farming an investment if they are convinced that their livelihood is

secured. Agricultural loans can provide that surety by helping to increase food productivity and agribusiness investments.

1.2 Statement of the Problem

Lack of capital has been considered as a contributing factor to poor utilization of lands in Kenya. Absence or inadequate credit facilities for agribusiness activities such as maize farming have negatively affected productivity and better income generation among Kenyan households (GoG Budget, 2015). The rationale behind inadequate credit facilities has been high interest rates and complex loan application process have hindered many farmers from accessing loans. Consequently, as reported by FAO (2012), food insecurity and poverty index in Kenya have been increasing annually causing malnutrition and in some instances deaths.

In this regard, it is important to point out that agricultural credits cannot be avoided if the goal is to increase maize productivity in farms. Thus, financing of maize production in Kenya is an important issue that needs to be properly addressed in Kenya. Past studies by Nawai and Shariff (2010); Wolter (2010); Auma and Mensah (2014) looked at factors influencing demand and access to agricultural loans in Kenya but focused on the credit attributes and lenders' loaning policy, but did not consider socio-economic factors influencing loan uptake by farmers. Therefore, this study sought to provide solutions to the aforementioned problem by investigating socio-economic factors influencing uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County.

1.3 Purpose of the Study

The purpose of the study was to investigate socio-economic factors influencing uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County, Kenya

1.4. Objectives of the Study

- i. To establish how farmers' loan experience influence uptake of agricultural loans in Kwanza Sub-County Trans-Nzoia County.
- ii. To determine how loaning policy influence uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County.
- iii. To assess how farmers income influence uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County.
- iv. To establish how land ownership rights influence uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County.

1.5. Research hypotheses

- i. Loan experience has no influence on uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County
- ii. Loaning policy has no influence on uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County
- iii. Level of income has no influence on uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County
- iv. Land ownership rights has no influence on uptake of agricultural loans by maize farmers in Kwanza Sub-County Trans-Nzoia County

1.6. Significance of the Study

Thriving maize farming investments promotes growth of agricultural sector through contribution to food security and strengthening of input supply chains. Hence, as long as food security remains depended on high maize production in Kenya, maize farming will continue to be an important activity that requires great attention and commitment. This study will give

recommendations to the government, financial institutions and other development agencies with regard to formulation of workable policies and programs to promote maize farmers' access to loans. This study will also provide important information which maize farmers in Kenya can use to boost their credit worthiness capacity so as to easily secure adequate loans from financial institutions to fund their farming activities. With improved funding, farmers might realize better returns from high maize production, thus, improving their economic status. Since farmers have characteristics that requires better understanding, studying how these characteristics influences their credit uptake, will be worth the time and budget. This is significant in that it can assist the commercial banks understand farmers properly so as to find out better ways to engage maize farmers. Finally, the study will add to existing literature concerning socio-economic factors influencing borrowing of agricultural loans by maize farmers in Kenya and be cited in future related studies.

1.7 Assumptions of the Study

The first assumption was that all respondents will honestly fill the questionnaires in full and return them immediately. Another assumption was that all the farmers who will be sampled grow maize yearly and know socio-economic factors that influence uptake of Agricultural Loans.

1.8 Limitations of the Study

The study was expected to be faced with time and financial constraints. Therefore, it was limited in its coverage of financial institutions viable for offering credit facilities to maize farmers. Since questionnaires was used, the study relied on the honesty of participants. The researcher also used interviews to collect information that the questionnaire could not have collected. Interviews also helped to validate the information given by respondents on the questionnaires hence, minimization of overreliance on respondent's honesty. Some respondents might have been

hesitant to give information due to suspicion. To clear suspicion among the respondents, the researcher assured them of the confidentiality and purpose of the study.

1.9 Delimitations of the Study

This study was delimited by poor roads, which affected the research process, the researcher too long to collect data from sampled maize farmers in the selected area. Bad weather was a delimitation that interfered with the smooth flow of the research process because the situation forced researcher to concentrate with research process early in the morning and not in the afternoon.

1.10 Definition of Significant Terms

Agricultural credit:	These are loans issued to farmers by financial institutions such as commercial banks, micro-finance enterprises and SACCOs to finance maize productivity.
Land ownership:	Refers to the ability to access and control land resources including utilization for agricultural activities
Level of income:	This refers to the returns a farmers earns either from farming or from engagement in other supplementary economic activities
Loan experiences:	Refers to the past loan lessons learnt by the farmer, lessons might be from experience from other farmers, cultures, beliefs or stereotypes.
Loaning policy	Refers to the loan products, requirements for securing a loan, and other related information with loans.
Maize farmers:	These are farmers growing maize every year.

Size of land:	Refers to the number of acres or hectars under maize cultivation
Socio-economic factors:	Refers to qualities of a farmer that make it possible or difficult to access loans.
Uptake of agricultural credit:	This is a state where maize farmers have the ability to acquire bank credit facilities. Enhancing access to credit therefore means enhancing the extent to which loans are available to maize farmers at an affordable price.

1.11 Organization of the Study

This proposal is organized into three chapters. Chapter one deals with the introduction of the research and presents the background of the study, statement of the problem, research objectives, research questions, significance of the study, assumptions of the study, limitations and delimitations of the study, definition of significant terms used in the study. Chapter two presents the literature review both theoretical and empirical. It also presents the conceptual framework of the study and hypotheses. Chapter three describes the methodology that will be applied in the whole process of data collection and its analysis. They include the research design, a brief description of the study area, the study population, sampling techniques to be used, methods of data collection and data analysis. Chapter four consists of data analysis, presentation, interpretation and discussion and lastly chapter five consists of a summary of findings, conclusions, study recommendations and suggestions for future studies.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter provides a review of existing literature on socio-economic factors and uptake of agricultural credits by maize farmers. The chapter begins with the description of concepts of socio-economic factors and uptake of agricultural credit. The empirical studies concerning socio-economic factors influencing uptake of agricultural loans are also discussed. Theoretical review describing theories supporting the study is presented. Finally, conceptual framework showing how factors under study relate, research gaps as well as the summary of literature review are presented.

2.2. Concept of uptake of agriculture loans

Socio-economic factors affect the access to credit and the participation of individuals in various financial programs. There are many factors limiting farmers from obtaining agricultural loans namely size of land, age, income level, and gender and past loan experience. For instance, according to Sisay (2014), as the age of an individual increases the opportunities to access the loan reduces considerably. This implies that as a person is growing up or getting old, the propensity to obtain loans from formal financial institutions decreases. The reason can be due to inability to repay the loan since the borrower might be too weak to work to earn more money to repay the loan. Hence, a financial institution might not want to shoulder the risk of bad debts. According to Mpuga (2015), age influences individuals decision on whether to apply for a loan and if so, how much. He further stated that young people might have the ability to save and request bigger loan than old people. Also, Zeller (2012) similarly reported that age significantly influences the decision to go for credit facilities in commercial banks. This therefore, implies that

young and energetic people with big ambitions have the desire to save more, access large loans and invest to get rich. In sharp contrast Tang *et al.* (2010) in their study established that those old farmers may have the ability to borrow more than young people. This is due to the fact that aged farmers have strong social capital and network and hence, easy access to agricultural loans. Another study Nwaru (2011) showed similar results. He concluded that the demand for credit may not be determined by the age of the applicant. Household total value asset is another socio-economic factor influencing uptake of agricultural loan. The composition of household assets is the determinant factor in deciding whether to award loans. This is because most assets can be attached to loan application as collaterals. Therefore, definitely low value asset may warrant disqualification or low credit score at the evaluation stage (Sisay, 2014). In a study conducted by Diagne (2015), the size of land was found out to have a positive effect on the access to commercial bank loans. This positive impact was attributed to land acreage as opposed to the seasonal farm produce. In addition, the value of land plays a significant role in pursuit for agricultural loan. Household income level influences the demand for credit facilities. This is because people with high income level may prefer to have a higher debt to meet their future expectations for high earnings (Chen & Chiivakul 2010). This implies people with low income levels have no surplus to save and may not have high demand for loans. But, the best elucidation may be that the lower the income level, the higher the marginal utility of consumption, affecting the demand for credits. Similarly, Magri (2012) claimed that the household's net worthy, as a reflection of today and future economic status is a key influencer of credit demand. Every time family's income goes up and are able to have the desired kind of life, their need for credit may also increase. In a study by Chen and Chiivakul (2010) it was revealed the quantity and value of assets have positive influence on the demand for credit. However, the same study showed that

people with many assets may not find the need to borrow. Similar results were obtained by Duflo *et al.* (2011) who said that the number of livestock heads owned by a farmer negatively affected the demand for credit as people saw no need to have more capital. Nevertheless, Mpuga (2015) in his report stated that, it was not the amount of assets that matter, rather, the value of those assets and how easily they could be converted into cash. Bendig *et al.* (2009) in his report argued that regular employment status and asset endowment improves loans uptake while those with no formal employment and are poor may find it hard to access loans. These findings are in agreement with those of Nguyen (2007) non-salaried, poor loan applicant are likely to be disqualified than those with regular and steady incomes. Nguyen also noted that family income level may have a significant influence on the accessibility of bank loans. The type of the activity of loan applicant may have an impact on the ability to access bank loans. Majority of rural households in less developed nations have taken agriculture as their full-time job. However, due to high risk involved possibly motivated by unpredictable weather conditions, there is high probability of defaulting (Tan *et al.*, 2010). Therefore, commercial banks may be less willing to extend credit facilities to farmers (Zeller *et al.*, 2012). The study by Anyiro and Oriaku (2011) in Nigeria also showed that occupation significantly affects farmers' chances of accessing loans from commercial banks.

2.3. Farmers' experience with loans and uptake of Agricultural Credits

According to Karumba & Wafula (2012), farmer's stances on loan uptake are fear or greed of exchange between making profits and avoiding fault-finding cost as a result of taking a risk. Wafula (2013) argues that there are three types of risk attitudes namely; risk averse, risk neutral and risk loving. Risk averse farmers are troubled in taking loans and choose an investment with a lower profit but rather has sure and reliable income. On the other hand risk neutral farmers only

care about the expected returns but turn a blind eye on the risks involved in securing the loans; they neither take loans nor forfeit to avoid them. Risk neutral farmers perceive loans as an expensive venture due to past loan experience. This may be attributed to high interest charges levied by the banks and other hidden chargers included during payments. A study by Sileshi *et al.*, (2012) on factors influencing loan repayment program among small scale farmers in Ethiopia, they established that farmers' loan repayment program was significantly affected by various factors namely off-farm activity, agro ecological zone, technical assistance, informal credit, social festival and farm losses severely. Moreover, it was established that due to such past loan experiences in loan repayment difficulties, most farmers stopped applying for loan. Lastly, risk loving farmers actively engage in risky investment and choose higher loans amount that will enable them have higher returns than the expected income. A study by Waweru (2012) on risk attitude and risk management strategies on maize farmers showed that most farmers are risk averse. They have negative attitude and perceive loans as a threat to their assets due to fear of losing their land and other asset used as loan security. They have a perception that little can be accomplished by taking loans and the risk involved in securing loans is too high while the returns too low hence no need of taking loans (Karumba & Wafula, 2012).

Some individual farmers and financial institutions use region-based stereotypes as a mental shortcut in making decisions whether or not to issue loans. Banks may generalize a region based on stereotype in cases where they face uncertainty on the borrowers' credit worthiness or the individual's quality to qualify for a certain loan product (Iftekha, 2017). Perception from loaning experience influences credit outcomes because financial institutions use them to judge the probability of opportunistic behavior of maize farmers from a particular region. Those farmers from high social regions for example regions known for large scale growing of maize are likely

to secure loans than those farmers from areas with average or little maize production even in the absence of strong legal and market institution. Due to the feeling that farmers from high social capital region are more cooperative and more credit worthy, this leads to the prediction by financial institutions that farmers from high social regions have a higher funding success and favorable debt terms than borrowers from other low social capital agricultural location. A study by Iftekha (2017) on stereotypes in person-to-person lending showed strong relationship between social capital of a county and its effects on the farmers loan borrowing outcomes. Individual farmers from higher social capital regions are more likely to be given loans and being fully funded by financial institutions where they enjoy borrowing large amounts of money at lower interest rates. Moreover, farmers from high social capital have more concentrated loan ownership meaning they are subjected to less risk sharing demand from loan guarantees. It's also believed that regions with high social capital have a wide financial investment market.

Maize farmers' cultural practices which may be attributed to the shared codes, beliefs and ethnicity between individual borrower farmers and the financial institution offering loans may increases the amount of loan a farmer can acquire and reduce loan payment default by the farmers. A study by Giannetti and Yafeh (2012) found that most financial institutions offer smaller loans, which charge higher interest rates to cultural distance than those they affiliate themselves with. These in the long run make certain regions more capital social equipped than others hence making individuals from these regions more qualified for loans than others. Individual farmers' perceptions towards loan uptake determine whether or not the farmers are willing to take loans. These perceptions are greatly influence by ones level of education, the cultural norms, and feeling towards loan products and financial institutions offering the loans. a

financial institution that affiliates itself with ascertain ethnic group may be perceived unfair or biased hence most farmers may perceive it as un trusted making them Shan from securing loans.

A report by World Bank (2015) shows that regulatory and administrative burdens on farmer entrepreneurship particularly on access to credits are key barriers to agribusiness development in developing countries. To obtain credits from reputable financial institutions, complex application procedures like registration of businesses for example are still demanded by the lender in many developing nations. The report further indicates that complex procedures in business registration and costs incurred are major barriers for young farmers' access to agricultural loans. In such circumstances, young farmers perceive loan application process as burdensome due to the long application procedure and steps hence they are unwilling to take the loans.

Similarly, a report by United Nations (2013) pointed out that loan application barriers can have negative ramifications on business development especially rural farmers who may not have links to professional networks. As such farmers perceive the business environment as unfriendly to their business and may give up and opt for other business ventures. On the other hand, established entrepreneurs are able to wind up the process of registration and licensing faster than their non-established counterparts. Farmers view that lack of reliable information on business opportunities and procedures. The same report stated that farmers were not able to obtain business information that could enhance their pursuit for agricultural credits. According to a study by Matavire (2013) on the challenges SMEs go through in accessing loans form financial institution in Zimbabwe revealed that most SMEs were unable to obtain credits because of restrictive requirements demanded by the financial institutions. He pointed out long and cumbersome loan application procedures as the main factor affecting demand for loans by SMEs. He recommended that the government of Zimbabwe should come up with policies that quicken

the process of loan application. Kisunza and Theuri (2014) pointed out that in a way of ensuring sustainability, lending institutions adopts strict measures to deal with difficult uncertainties like fraud, defaults and delinquencies. In another study by Waita (2012) on determinants of loan default among agribusiness enterprises found out due to high default rates associated with farming enterprises, banks implemented policies to trim amount of loans given out to SMEs agribusinesses. Consequently, the number of requests for loans fell sharply.

2.4. Loaning policy and Uptake of Agricultural Credits

According to Nyangweso (2013), loan awareness is the understanding of financial loan products and the involved concepts on investment and loan uptake. It is vital for farmers to be aware of the loans products offered by banks in order to best make decisions in terms of where to get help, where to apply for the loan and have an in-depth understanding of the credit terms and conditions. As asserted by Danso and Adomako (2014), farmers' financial behavioral uptake towards loans is greatly influenced by the financial literacy of the household and the level of loan awareness. They argues that famers who are not financial knowledgeable and aware of loan products are prone to take financial advice from others which influence their perception and attitude towards loan application. Those who are financially aware of the loan products take less advice from peers or friend hence they take part in the stocks marker and acquire loans. Loan awareness and financial literacy empowers maize farmers in curbing financial distress through insight that alleviates risks such as loan debt and inability to fully repay their loans (Nyangweso, 2013). Through loan awareness and financial knowledge, farmers will better make informed decisions of the type of loan that best suits them intermesh of the interest charged the payment period and the mode of payment. With proper loan awareness, maize farmers should be able to opt for long term loans rather than short term because most of them intend to repay the loans

after harvesting (Nyangweso, 2013). On the other hand, financial knowledge enables farmers to make budgets for their farming activity and daily monitoring of their crops hence improving their farm management skills. In addition, farmers will be able to develop saving plans that best suit their intended loan product, banks in the long run are able to determine their credit worthiness by checking on their saving plans and decide on the loan they qualify for.

According to Ernst and Young (2011), as sound education systems and strong overall training programs in the country can help improve agricultural production through loan equipment. Good education equips a person with the capacity to spot business opportunities, have self-esteem and knowledge to go for them. Education also gives people the ability to access financing sources (Kisunza & Theuri, 2014). Access to loans facilitates the creation, survival and growth of businesses. Level of education of farmers can also play a critical role in pursuit of loans for farm activities. Financial institutions may ask for academic papers in credit evaluations. The probability for uneducated person to access a loan from a formal financial institution is lower compared to highly educated applicants. This is because the lender assumes an educated person may have better plans in utilizing the loan (Tang, 2010). The financier also assumes that those highly educated persons already enjoy good income and only borrow to expand their business empires. Tang *et al.* (2010) further indicated that education is one of the critical factors influencing farmers' demand for agricultural loans. In their report, they showed that any additional training would increase the chances of accessing credit facilities by 2.5%. However, the impact of this factor on loan access was not the same in all financial institutions sampled. For instance, whereas education boosts the chances of people applying for loans in commercial banks, it had no effect on loan uptake in informal institutions. Nevertheless, Tin et al. (2010) reported that many people in Vietnam are unskilled and are employed in places where education is not required and use

their pays lips to access loans. Birech (2013) conducted a study on the attributes influencing loan consumption among farmers in Nakuru County. He concentrated on the impact of investment site on loan consumption and the impact of investment knowledge on loan consumption. The study target population was 74,234farmers. The study sample size was 312. The results showed that there is a significant positive correlation between investment site, entrepreneurial knowledge and uptake of credit by farmers.

The results by Chen and Chiivakal (2010) indicates that basic education can have a significant positive impact while post-secondary education can have a negative effect on the demand for loans by rural households. In conclusion, they stated that the level of education does not contribute to the demand for credit from financial institutions. These findings are inconsistent with those of Tang *et al.* (2010) indicating inconclusive studies on the impact of education on demand and access of credits. This study intends to determine conclusive link between education and uptake of agricultural loans especially by maize farmers.

In a study conducted by Peace (2011) to determine the relationship between loan application and accessibility in Uganda, it was established strong positive relationship between basic literacy, financial literacy and access to loans. The study stated that borrowers who cannot read and write might also not understand the financial literacy coaching on skills like project identification skills, book keeping, numerical skills sometimes extended by bank staff for free. Banks often avoid the risk of lending out to such customers who they believe might not utilize the credit properly. According to Birech (2013), Education builds a strong foundation for owners of businesses to develop critical thinking skills and be able to comprehend basic processes of business like planning, accounting and management.

Hopkins (2011) indicated that the major challenge that provisions of financial services to rural farmers is poor financial capacities of in developing countries. According to Hopkins financial capability is defined as the combination of skills, knowledge, attitudes and behaviors that persons require to make better personal financial decisions that is suitable to their financial and social circumstances. He further stated that most farmers typically do not have knowledge of formal financial enterprises and the terms and value of financial products credits and savings. They also may have misunderstandings about commercial banks holding myths that banks are only for the rich.

2.5. Farmers' income and Uptake of Agricultural Credits

Increased returns from maize production leads to a corresponding increase in the household income, this implies that farmers will have ample debt payment capacity. Without satisfactory farm produce most farmers will be unable to repay their loans, meaning they will be subjected to extra charges due to late payments (Lau, 2013). Banks and other financial institutions from which farmers wish to acquire loans require past records of the financial performance of their farms in order to determine the credit worthiness of the farmers and make decisions whether or not they qualify for the applied loan. According to Briggerman (2013), there are various ways of measuring farmer's loans repaying capacity. The first method is to determine the credit worthiness of farmers by use of term-debt and capital-lease coverage ratio. By using this ratio, financial institutions are able to determine whether a farmer can survive and fully repay previous loans and meet capital lease requirements with his/her current level of income. This method however does not put into consideration current market conditions and it is uniquely sensitive to certain financial terms (Briggerman, 2012). These terms include those on loans with interest below current market rates. For instance, maize farmers are able to secure more affordable loans

at relative interest rates by providing other assets as extra collateral or by having a more creditworthy member of the household apply for the loan. Having a member of the farming households with a stable source of income for example, he/she is employed by the government and has a constant monthly salary means that the household is more credit worthy and can be able to secure a loan through that member. This however is a drawback on families without other sources of income and rely entirely on maize production as they directly affected by decreased yields and they cannot access loans from financial institutions to boost their production capacity (Nwaru, 2011). As a measure of addressing short comings from the term –debt and capital lease coverage ratios, the U.S agricultural department has developed the debt repayment capacity utilization ration which is more accurate and reflects more on current market conditions. This method reflects the farmers’ potential to service a loan rather than base on the borrowers payment history. It divides a farmers’ outstanding loan balance or debt balance by maximizing the amount of money a farmer can afford at current market interest rates. Research has shown that farmers will be unable to repay their outstanding loans by relying on farm income alone. This is attributed to the fact that farm income due to maize production is highly volatile due to changes in the amount produced, a rise in farmers income leads to slower of debt growth meaning that farmers will be able to repay their loans in time (Odhiambo, 2012).

Gender also plays a crucial role on loans uptake traditionally, men are the custodian of the family’s property and can use family assets to secure loans unlike women. Mwongera (2014) in his study on influence of interest rates on credit access by women in Machakos County established that there was a significant positive relationship between interest rates and uptake of loans. Most respondents indicated that interest rates added to the principal loan applied in the past is the most crucial factor affecting their credit demand. Respondents also indicated that they

would borrow more if interest rates on commercial loans were to be lowered. Similarly, Muratha (2015) used logic regression analysis to investigate the factors influencing credit accessibility at family bank of Kenya. He tested interest rate charged against demand for loans at the banks. It was determined that the two variables had a positive significant relationship. This implied that interest rate placed on loans can serve as a basis for loan application in the future. A survey conducted by Kung'u (2011) in West lands in Nairobi to study factors influencing credit access and uptake by SMEs revealed that most SMEs were not willing to apply for loans due to past painful experience they went through repaying loans with huge interests. There was also a significant relationship between loan collaterals and demand. Same results were obtained by Karanja, Mwangi and Nyakarimi (2014) who stated that 80% of women sampled in Isiolo indicated that they could not go for bank loans to finance their businesses due to unrealistic collaterals and interest rates imposed by banks.

2.6. Land ownership rights and Uptake of Agricultural Credits

Land can be owned privately, communally, publicly or owned by the government. Maize farms owning private land can use their land as collateral for loan acquisition. However, several factors limit land based collateral and credit acquisition among farmers; these factors include; lack of qualified collateral in cases where farmers do not have land title deeds and uncertainty of returns on investment (Place and Hazell, 2010). Agricultural land can either be acquired through purchase of private land or through leasing. As opposed to private land where the owner has control over land, leased land on the other hand means access to land but lack of control over it. Household that lease land cannot use the land as loan security hence they cannot access agricultural loans.

Demand for credit can be enhanced by land tenure security. This is because increased land security may result into willingness by farmers to heavily invest in land giving rise to greater demand for capital (Hazell, 2010). On the other hand, the impact on credit supply is enhanced willingness by lenders to offer credits if borrowers have the capacity to attach secured land as security for the loan. With titled and secured land as security for the loan, lenders can legally repossess the same land in case of loan default. Additionally, the threat of auctioning land can act as driving force for the borrower to repay the loan under the agreed terms. Therefore, farmers with titled and secure land might often find it easier to access credit due to documentation of land tenancy and buyers might not worry about claims of fraud (Carter & Olinto, 2013).

Feder (2016) established a connection between land tenure and credit access. The author argued that if title provides land security then land can easily be transferred without further questions on the ownership. He further argued that the combination of the two facts makes land becoming collateral hence farmers in Thailand who possessed title deeds had greater chances of obtaining large loans with reduced interest rates. Another study in Gambia by Hayes (2016) indicates that land ownership enhances individual rights that might lead to greater borrowing and investing, resulting in better productivity. However, Barrows and Roth (2012) argued that although land ownership increases access to credit, it does not mean the land owner can access any amount of credit since the amount of loan requested is pegged on the value of land. In contrast, Place and Hazell (2010) established no significant association between tenure rights and investment in the land in Kenya, Rwanda and Ghana. In addition, Kimuyu (2014) found out that the tenure systems in Uganda and Tanzania did not increase access to land secured credits, enhanced security through application for title deeds as well as increased investment. Another study by Roth (2010) shows little use of title deeds in credit worthiness evaluation. Indeed, most loans were obtained

with untitled landholders. Credit affects farmers' ability to practice profitable agriculture. Nkonya (2014) found that access to informal credit was related to increased labor intensity in crop production and higher cereal production in Uganda. In recent study by Deininger and Ali (2017), most farmers strived to acquire land ownership through application for title deeds so that they could use the document as collaterals for securing loans from commercial banks. They were also willing to pay more for the document since they were aware of greater economic benefits that might be realized from legally recognized land ownership. Deininger and Ali (2014) recommended that farmers need to embrace commercial farming since they can use their land ownership documents to access source of funding.

2.7. Theoretical Review

The current study will mainly be informed by the signaling theory. This theory argues that good individuals or farmers should strive to offer collateral for them to signal banks that they are those borrowers who are less risky to deal with and offered loans with lenient interest rates. Those borrowers with no strong collateral evidence for their loans show they are risky when evaluating their credit worthiness. Individual borrowers or firms proving to offer higher collateral will enjoy low interest rates whereas those that have weak collaterals will be required to pay higher interest rates. In reverse, signaling theory argues that banks mainly request for collateral or agreements for moderately risky individuals or companies which happen to also pay higher interest rates (Chodechai, 2004).

The theory is highly relevant to the current study since it specifies the nature and type of loan security provided by farmers when applying loans in commercial banks. The theory also indicates a sign of risk level in the agricultural sector. This theory, thus, offers a possible account that commercial banks are ready to extend credit facilities to farmers depending on the signal

provided by their collateral (Radevic & Ahmedin, 2010). If the signal is positive and favorable, farmers may not struggle to access credits from commercial banks and vice versa.

Another theory that supports this study is called credit clearing theory. This theory assumes that it is the rate of lending that influences the quantity of credit banks dispenses to satisfy the credit market. In case collateral requirements remain unchanged; the only price mechanism is the interest rate. As demand for credit goes up, the interest rate is also increased and vice versa. This means that there is a positive link between the probability of defaulting on the side of the borrower and the interest rate placed on the loans (Ewert *et al*, 2000).

The only weakness of this theory is that it does not openly argue how collateral affects the risk premium. The theory gives a feeling that collaterals have no influence on the rates of lending, and if someone who is a risky borrower wants to get a loan on the same rate of lending as a lower risk borrower, then what is only required is to promise more collateral so as to lower the level of risk to benefit from low interests. This only promotes moral hazard and adverse selection occurrences (Karumba & Wafula, 2012). This theory is also relevant to the study in that

In relation to this study, the theory tries to elucidate risk as a major factor that influences lending of agricultural loans. Since the level of risk in agriculture is considered high, farmers should be prepared to pay higher interest rates to cover the risk. As a consequence, farmers may be discouraged to apply for loans in commercial banks (Karumba & Wafula, 2012).

2.8 Conceptual Framework

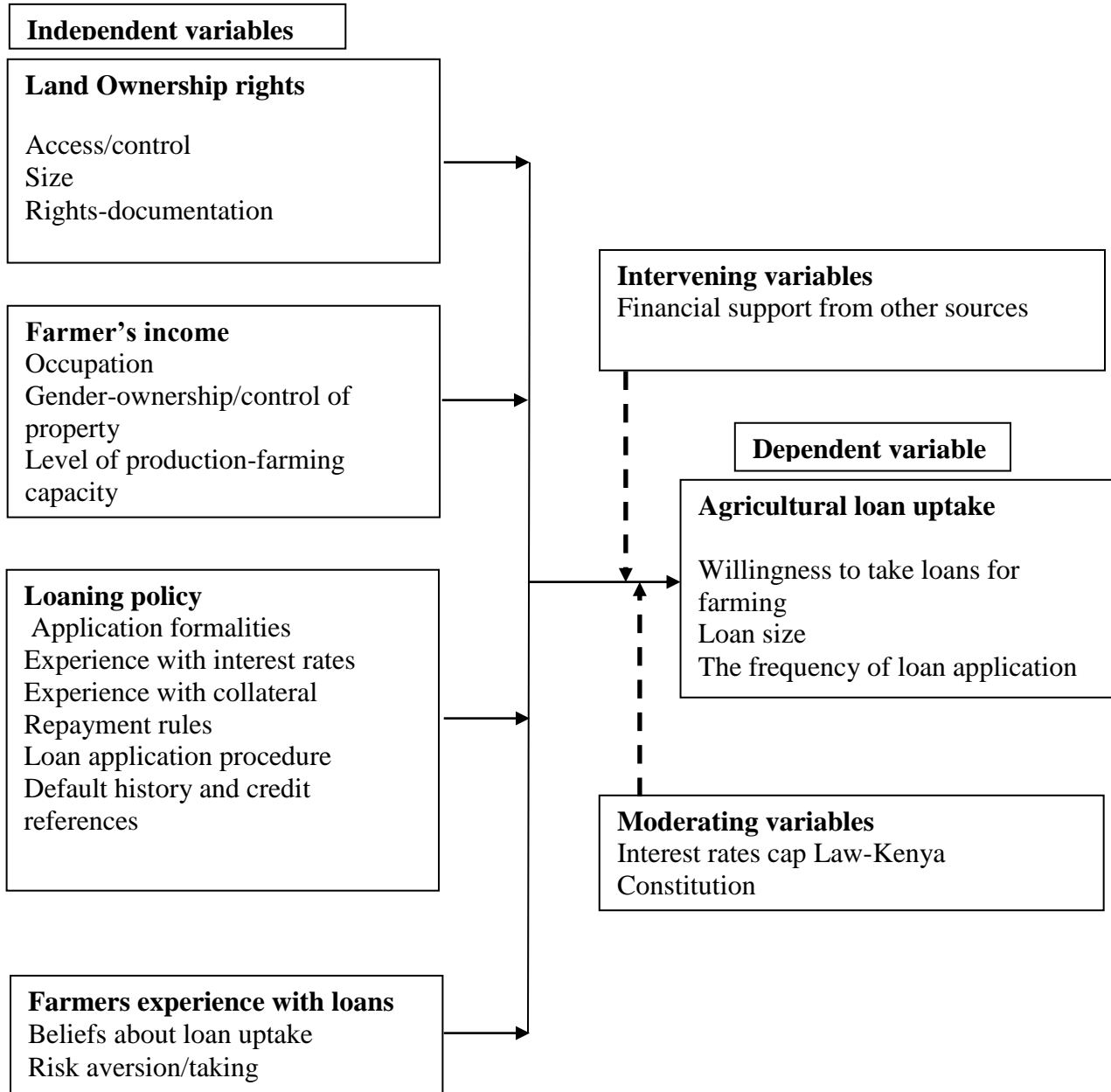


Figure 2.1: A conceptual framework showing how some factors influences uptake of agricultural loans by maize farmers.

Source: Author's Conceptualization (2018)

According to Jabareen (2009), a conceptual framework is a product of process of theorization that connects concepts which together gives a better understanding of phenomena under study. The concepts that make up a conceptual framework support each other, explain their respective phenomena, and determine a framework-specific philosophy that defines associations. Conceptual framework for the uptake of agricultural loans by maize farmers in Kwanza Sub-County is represented in Figure 2.1. Agricultural loan uptake by maize farmers is conceptualized to be influenced by the land tenancy, farmers' level of income, past loan experience/awareness and perceptions towards loan application.

Maize farmers' decision to absorb agricultural loans from financial institutions is hypothesized to be influenced by some attributes. These factors include: land tenancy like self-owned land; community owned land; family owned land; farmer association's land and rented land. Farmer level of income, which can be measured by occupation, size of land under farming or in economic use, and gender were conceptualized as influencers of maize farmer's uptake of agricultural loans. Past loan experience and awareness towards loan application in terms of experience with interest rates, experience with collateral requirement, loan application procedures, repayment rules and default history and credit references are also conceptualized to affect the maize farmers' absorption of agricultural loans. Finally, perceptions and attitudes farmers have towards loan uptake influence their ability to acquire credit. This includes beliefs about loan uptake, risk aversion/taking and stereotypes about loan uptakes determines the ability of farmers to secure credit from financial institutions. Uptake of agricultural credits as measured by farmers' willingness to take loan, the size of loan requested and frequency of loan application is moderated by lenders' policy on agricultural loans and credit attributes such as interest rates,

repayment period and collaterals. Government loans, grants and subsidies extended to maize farmers are listed as intervening factors; between selected socio-economic factors and uptake of agricultural loans.

2.9. Research Gaps

Millions of maize farmers in Kenya especially smallholder ones are looking ways to improve productivity and market accessibility. Accessing financing through credits, modernizing technology and improving market access can go a long way in enhancing their prospects. Specifically, helping farmers access agricultural credits will call for proper information and building business relationships with commercial banks.

Although factors that influence farmers' access to credits have attracted the attention of some researchers both internationally locally, little is still known about the socio-economic factors influencing uptake of agricultural credit by maize farmers and Kwanza Sub-County in particular. Although researchers have put in efforts to better understand this subject in an African context these studies only focused on smallholder farmers leaving out large scale farmers who by virtue of their economic status are frequent bank customers especially in Kwanza Sub-County. The literature reviewed has left a relative gap in state-of the-art on this study subject, especially in the context of Kwanza Sub-County. Hence, there is little apparent evidence on socio-economic factors influencing uptake of agricultural credits by maize farmers in Kwanza Sub-County. Consequently, the motivation for this study is: what are the main socio-economic factors influencing uptake of agricultural loans by maize farmers in Kwanza Sub-County, Trans-Nzoia County.

2.10 Summary of Reviewed Literature

Adequate financing is crucial to any business. As discussed in the literature, land ownership rights, farmers' level of income, past loan experience and awareness towards loan uptake of credits by farmers especially in commercial banks in different ways. Several studies have attempted to study these variables against loan accessibility in different parts of the world. Most studies gave similar results while others contrasted in different ways. For loans to be beneficial to maize farmers, they must be driven by demand and tailored to certain needs of farmers while at the same time credit supply should be available and accessible.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents an overview of research methodology that will be employed in the study. The chapter describes research design, target population, sample and sampling procedure, instrumentation, validity and reliability of research instruments, data collection procedure and data analysis.

3.2 Research Design

Research design is the organization of data collection and analysis in a manner that achieves study relevance and objectives. Drawing reference to the above conceptual framework, descriptive survey design will be used to determine whether land tenancy, level of income, loan experiences and awareness towards application of formal credit, and perceptions/attitudes towards significantly influences maize farmers' uptake of agricultural loans. Descriptive survey design is a design that seeks to describe characteristics of study population without influencing it in any way. The method is more efficient because data is gathered in a sample population (Mugenda & Mugenda, 2003). Considering this was a descriptive analysis study, the socio-economic factors were foreseeable to have a high or low percentage and rated as either more significant or less significant by farmers in their absorption of agricultural loans. Factors which had a high percentage and rated as more significant by the farmer were the ones deemed to influence the maize farmers' uptake of agricultural loans.

3.3 Study Population

Cooper & Schindler (2007) defined population as the total collection of elements that the researcher intends to make some inferences. This study involved two types of populations namely maize farmers and crop extension officers. The study population comprised 14631 maize farmers within the study area. These farmers gave their opinions regarding the factors influencing their uptake of agricultural loans for maize farming. The study population also included the 5 crop extension officers attached to Kwanza-Sub-county office.

Table 1: Distribution of population of maize farmers in kwanza sub-county

Ward	Maize farmers
Kwanza	2976
Keiyo	3180
Bidi	2578
Kapomboi	5897
Total	14631

Source: Department of Crops, Kwanza Sub-County (2018)

3.4 Sample Size and Sampling Procedure

Population census was used to obtain data from all 5 crop extension officers in all wards participated in the study as respondents. Population census was preferred in collecting information from crop extension officers since they are few. Census method gave a high degree of statistical confidence in the survey data due to incorporation of every element of the population (Botev & Ridder, 2017).

The following formula can be used to determine the sample size.

$$N = Z^2 pq / d^2$$

Where:

n = the desired sample size (if target population is greater than 10,000)

z = the standard normal deviate at the required confidence level.

P = the proportion in the target population estimated to have characteristics being measured.

Q = 1-p.

d = the level of statistical significance set.

If there is no estimate available of the proportion in the target population assumed to have the characteristic of interest, 50% should be used as recommended by Fisher et al. If the proportion in the target is 0.50, the z – statistic is 1.96 and desired accuracy at 0.05 probability level, then the sample size is adequate (Mugenda and Mugenda, 2003).

$$\begin{aligned} N &= (1.96)^2 (0.5) (0.5) / (0.05)^2 \\ &= 384 \end{aligned}$$

The study population of maize farmers is above 10,000 and therefore, so a sample size of 384 is sufficient.

Stratified sampling technique was used to select 384 farmers from all the wards (stratus) within Kwanza Sub-county. Stratified sampling design was used since subpopulations (wards) within an overall population vary in terms of ward population composition, size and other economic activities; hence it was important to sample each ward (stratum) independently. Then a simple systematic sampling applied within each stratum to choose maize farmers found along one line such as road or a river. The aim was to enhance the precision of the sample by minimizing sample error (Botev & Ridder, 2017).

Table 2: Sample size

Wards	Population	Sample size
Kwanza	2976	78
Keiyo	3180	83
Bidi	2578	68
Kapomboi	5897	155
Total	14631	384

$$\text{Sample size for each strata (ward)} = \frac{\text{Population for each strata} * \text{total sample size}}{\text{Total population size}}$$

(Botev & Ridder, 2017)

3.5 Research Instruments

3.5.1 Questionnaires

A questionnaire is an instrument that helps in collection of data from a very large sample and usually comprises a number of questions to be administered to the respondent. The questions were relevant and adequate to collect enough information to satisfy each study objective. Questionnaires were used in this study due to large sample size of maize farmers in Kwanza Sub-County (Mugenda & Mugenda, 2003). A survey questionnaire prepared by the researcher were distributed to the selected maize farmers for filling and collected immediately.

3.5.2 Interviews

Interview is a type of data collection instrument that requires the researcher to have a direct contact with the respondent and verbally engaging each other. The researcher prepared open ended questions for the interviews with all crop extension officers in Kwanza Sub-County and credit managers in selected banks in Kitale town (Equity, Co-operative, Family and Kenya Commercial Banks). Interviews were preferred because the respondents were few and due to the

need to obtain in-depth information which questionnaires might miss to capture (Mugenda & Mugenda, 2003).

3.6 Pilot study

Pilot study refers to the pre-visit conducted to the study area for the purpose of among others familiarize with the area, test instrument validity and reliability (Pallant, 2013). The rationale behind conducting pilot study was to establish any anomalies in the questions, and methods used in data collection in order to make corrections before actual data collection process.

3.6.1 Validity of Research Instruments

Validity measures the degree to which research instruments measures what is supposed to measure. Validity is the factual accuracy of the data and report. Validity tries to erase doubts on what is reported (Pallant, 2013). Validity enhances defensibility and credibility of a research. Hence, in this study, the researcher considered validity and gave accurate report. Validity for the research instruments was established using the supervisor and fellow researchers' feedback from the results presented to them by the researcher. This form of tells how well theoretical constructs can be represented in a questionnaire or interview guide (Pallant, 2013). Both face and content validity were applied in this study.

3.6.2 Reliability of Study Questionnaires

Reliability refers to the degree to which data obtained by a procedure or measurement can be replicated. The aspect of reliability is said to happen when similar scores are obtained with repeated testing using the same group of respondents. Reliability of the study questionnaire was tested through a pilot study; data collected in using questionnaires was entered in SPSS software

and Cronbach's Alpha was established. A correlation that was above 0.7 according to Pallant (2013) indicated a strong reliability of the study questionnaire.

3.7 Data Collection Procedure

Primary data was collected using a pretested closed ended questionnaire. The questionnaire was administered to farmers by the researcher himself and three research assistants. Farmers were asked to rate various attributes of study objectives based on their influence on the uptake of agricultural loans. The researcher conducted interviews with the five crop extension officers and 4 credit managers drawn from four selected banks to obtain valuable information relating to uptake of agricultural loans by maize farmers in the sub county.

3.8 Data Analysis Techniques

Data collected was analyzed both qualitatively and quantitatively. Qualitative data collected through interviews was analyzed using content analysis method. These types of data was categorized, analyzed and interpreted under their respective themes and quotes. Quantitative data was analyzed by descriptive analysis techniques in form of tables to show frequencies and percentages. Statistical Package for Social Sciences (SPSS) was used in data analysis. Multivariate linear regression analysis was conducted to establish the influence of independent variables on dependent variables. Notably, the strength of association between independent variables and dependent variables was determined. This statistical tool was also used to test hypothesis.

In its simplest form multiple regression analysis involved determining the line of best fit relationship to explain how the variation in an outcome (or dependent) variable, Y, depends on the variation in a predictor (or independent) variable, X. Once the relationship is estimated, it is possible to use the equation:

The following model used:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu_i$$

Where;

(a) Dependent variable is Uptake of Agricultural Loans and is denoted by Y

(b) Independent variables are:

X₁ Loan experience

X₂ Loaning policy

X₃ Farmers' Income

X₄ Land ownership rights

β₀ constant term

β_j Beta coefficients for j=1, 2, 3, 4.....n which indicate per unit change in the dependent variable as the independent variable changes by one unit

μ_i error term for i=1,2,3,4.....n

However, the presence of a moderating variable was measured through adding Z as a Moderating variable on the model that will regress on each of the five variables.

$$Y_i = \beta_0 + \beta_1 X_1 Z + \beta_2 X_2 Z + \beta_3 X_3 Z + \beta_4 X_4 Z + \mu_i$$

3.9 Ethical Considerations

The researcher sought for the consent of the respondents before embarking on field data collection. Respondents was assured of the confidentiality of information given and their identities. The participants was assured that the information given was purely for academic use

and was not shared for commercial gains. Above all, the questionnaires used to collect data was destroyed immediately after the study is over and a final report successfully defend

3.10. Operationalization of variables Table

Table 3: Operationalization of Variables Table

Specific Objective	Variables	Indicators	Measurement Scale	Methods of Data collection	Data analysis Technique
Influence of Land ownership rights on the uptake of agricultural credit by maize farmers	Land access, control	Family land Community owned land Farmers' association owned land Rented land	Nominal Ordinal	Questionnaires Interview guides	Thematic analysis Descriptive statistics Regression analysis SPSS
Influence of Level of income on the uptake of agricultural credit by maize farmers	Level of income	Occupation Gender Capacity of farming Credit turnover	Nominal Ordinal	Questionnaires Interview guides	Thematic analysis Descriptive statistics Regression analysis SPSS
Influence of Loaning policy on the uptake of agricultural credit by maize farmers	Loaning requirement, and other related policies	Experience with interest rates Experience with collaterals Loan application procedures Default history and credit references Repayment rules	Nominal Ordinal	Questionnaires Interview guides	Thematic analysis Descriptive statistics Regression analysis SPSS
Influence of Farmers' experience towards uptake of agricultural credit by maize farmers	Personal experience with loans and experience from others	Beliefs about loan uptake Stereotypes Risk aversion/taking	Nominal Ordinal	Questionnaires Interview guides	Thematic analysis Descriptive statistics Regression analysis SPSS

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION

4.1.Introduction

This chapter presents the response rate, reliability test statistics, findings on demographic information of respondents, findings from document analysis, and descriptive findings related to the research questions. Inferential statistics aimed at testing the null hypothesis and establishing the association between variables features in this section. Discussion for each finding related to the research question features in this chapter.

4.2.Response rate

In chapter three, it was indicated that the sample size of maize farmers was 384 while that of agricultural extension officers was 5 and that of credit managers/officers was 5. See table 1 for response and response rates.

Table 4: Response rate

Respondents	Sample size	Response	Response rate
Maize farmers	384	384	100%
Agricultural extension officers	5	5	100%
Credit Managers/Officers from Banks	5	5	100%
Total	394	394	100%

In the findings presented in table 4, the response rate for maize farmers, agricultural extension officers and credit managers from banks was 100% in each case.

4.3.Reliability test results

In the previous chapter, it was stated that reliability was to be established using Cronbach's Alpha, the test was established as follows

Table 5: Reliability statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.761	29

Findings in table 5 indicate that reliability test results value (Cronbach's Alpha) was 0.761, which indicated that the research instrument (questionnaire) was highly reliable and that the instrument would give consistent findings that were 76.1% accurate upon repeating data collection to the same population.

4.4. Demographic characteristics of respondents

This section presents findings related to the demographic characteristics of respondents (farmers), which include gender, age, size of land and purpose of practicing maize farming.

Table 6: Demographic findings of respondents

Demographic Characteristics	Frequency	Percent
Gender		
Male	244	63.5
Female	140	36.5
Total	384	100.0
Age Bracket		
18-35 years	117	30.5
36-50 years	190	49.5
51-65 years	69	18.0
Above 65 years	8	2.1
Total	384	100.0
Purpose of doing maize farming		
Food	60	15.6
Commercial	205	53.4
Both	119	31.1
Total	384	100.0
Size of the farm		
Below 0.5 acres	29	7.6
0.5-2 acres	231	60.2
2-4.5 acres	110	28.6
Above 4.5 acres	14	3.6
Total	384	100.0
Period of doing maize farming		
Below 2 years	3	0.8
3-5 years	34	8.9
6-10 years	110	28.6
11-15 years	137	35.7
Above 15 years	100	26.0
Total	384	100.0

From the findings presented in table 6, out of 384 respondents who took part in the study, male respondents were 244 (63.5%) while female respondents were 140 (36.5%). In terms of age

bracket, this population as distributed as follows: respondents aged between 18-35 years were 117 (30.5%), 36-50 years were 190 (49.5%), 51-65 years were 69 (18.0) while above 65 years were 8 (2.1%). Out of 384 respondents who took part in the study, 205 (53.4%) stated that they were practicing maize farming for commercial purposes, while 119 (31.1%) were practicing farming both for commercial purposes and human consumption, and 60 (15.6%) of the respondents stated that the major purpose of engaging in maize farming was for food. The majority of farmers were practicing farming on small pieces of land; notably, 231 (60.2%) farmers indicated that they practiced maize farming on land size of between 0.5-2 acres. In a different case, respondents who practiced farming on a farm land of between 3-4.4 acres were 110 (28.6%), respondents who practiced farming on a land size below 0.5 acres were 29 (7.6%) while respondents who practiced farming on a size of land above 4.5 acres were 14 (3.6%). In terms of the period taken to engage in maize farming, the majority of respondents (137) representing 35.7% stated that they had engaged in maize farming for a period between 11-15 years. Out of 384 respondents, 110 (28.6%) indicated that they had practiced farming 6-10 years, while 100 (26.0%) practiced farming for a period above 15 years and 34 (8.9%) practiced farming for a period between 3-5 years.

4.5. Findings on Study Objectives

The purpose of this study was to determine the influence of socio-economic factors on maize farmers uptake of loans in Kwanza Sub-County. Specifically, the study focused on the influence of loaning experience, loaning policy, farmers' income, and land ownership systems on loan uptake. Based on that, the following are findings relate to the description of variables.

4.5.1. Farmers' loan experience and uptake of agricultural loans

This section gives respondents views as they relate to influence of farmers' loan experience on uptake of agricultural loans.

Table 7: First experience with loans and if that determines the future

Statements	Yes		No	
	F	%	F	%
Ever applied for a loan?	303	78.9	81	21.1
Past experience with loans, would you apply for another loan?	76	19.8	308	80.2

From the findings in table 7, out of 384 respondents, 303 (78.9%) respondents accepted that they had ever applied for agricultural loans while 81 (21.1%) respondents denied ever applying for agricultural loans. Upon inquiry whether they would apply for another loan in the future, 308 (80.2%) denied applying for agricultural loans in the future while 76 (19.8%) respondents indicated that they would apply for agricultural loans in the future. Such findings indicated that most respondents failed to secure agricultural loans because of bad loan experience, which discouraged them.

Table 8: Statements related to respondents' loan experience and their responses

Statements	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
Loan experience, and attitudes influence demand/access	297	77.3%	84	21.9	3	0.8	0	0.0	0	0.0
Loan default history by farmers makes them shy away from future loan uptake	271	70.6	113	29.4	0	0.0	0	0.0	0	0.0
Experience with auction of personal properties because of loan defaulting discourage uptake	142	37.0	230	59.9	11	2.9	1	0.3	0	0.0
Few famers have enhanced farming practices through uptake of agricultural loans	94	24.5	167	43.5	19	4.9	95	24.7	9	2.3

In the findings presents in table 8, 297(77.3%) respondents strongly agreed while 84 (21.9%) agreed that loan experience and attitudes influenced demand/access of agricultural loans to maize

farmers. Out of 384 respondents who took part in this study, 3 respondents representing 0.8% were undecided as to whether loan experience and attitudes influenced uptake of agricultural loans. In another case, 271 (70.6%) respondents strongly agreed that loan default history made them shy away from future loan uptake. Giving the same view, 113 (29.4%) respondents agreed that loan default history made them shy away from future agricultural loan uptake.

Table 9: highest loan ever secured

	Frequency	Percent
less than Ksh. 100,000	371	96.6
Ksh. 100,000-500,000	11	2.9
above Ksh. 500,000	2	.5
Total	384	100.0

In table 9, the majority of respondents 371 (96.6%) indicated that the highest loan they had applied for was less than Ksh. 100,000. This population was followed by 11 (2.9%) respondents who stated that the highest agricultural loan they had applied for was worth between Ksh. 100,000-500,000. Different from that was a group of 2 (0.5%) respondents who observed that the highest agricultural loan they had applied for was above Ksh. 500,000. These findings showed that the majority of maize farmers were either restricted from applying high amounts of credit or were not willing to apply for high-valued loans.

4.5.2. *Loaning policy and uptake of agricultural loans*

This section presents descriptive findings related to loaning policy and uptake of agricultural loans by farmers.

Table 10: Statements related to loaning policy and uptake of agricultural loans by farmers

Statements	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
Interest rates charged on past loans influence future uptake of loans	242	63.0	138	35.9	4	1.0	0	0.0	0	0.0
Collaterals demanded by banks on past loans influence future uptake of agricultural loans	262	68.2	122	31.8	0	0.0	0.0	0.0	0	0.0
Loaning policy and procedure are customer friendly	4	1.0	12	3.1	18	4.7	235	61.2	115	29.9
Capped interest rates make banks to hedge against lending maize farmers	171	44.5	189	49.2	22	5.7	2	0.6	0	0.0
Banks have hidden charges that they levy influencing uptake of agricultural loans	190	49.5	183	47.7	2	0.5	9	2.3	0	0.0
There is a tendency of banks to auction assets of the loanee upon default of repayment	205	53.4	176	45.8	2	0.5	0	0.0	1	0.3

In the findings presented in table 10, 243 (63%) respondents strongly agreed that interest rates charged on agricultural loans influenced future loan uptake. Almost giving the same views, 138 (35.9%) respondents agreed that interest rates charged on agricultural loans influenced future loan uptake. This meant that farmers would secure agricultural loans in case interest rates charged are lower and would shy away securing agricultural credit to enhance maize farming practices. Different from that was a group of 4 (1%) respondents were undecided on whether interest rates charged on agricultural loans influenced their ability to secure agricultural loans. In another case, 262 (68.2%) of respondents stated that collaterals demanded by banks on past loans

influenced future uptake of agricultural loans. In the same view, 122 (31.8%) agreed that collaterals demanded by banks on past loans influenced future uptake of agricultural loans. In the same table, 235 (61.2%) respondents disagreed that bank loaning policy and procedure were customer friendly. Relative to this group was 115 (29.9%) respondents who disagreed that loaning policy and procedure were customer friendly. This was an indication that banks loaning policy and procedure was not friendly accordingly to the majority of respondents. Contrary to these views was 18 (4.7%), 12 (3.1%) and 4 (1%) respondents who were undecided, agreed and strongly agreed that loaning policy and procedure were customer friendly.

The practice of the regulator capped interest rates was reacted to differently by respondents; notably, 189 (49.2%) respondents agreed while 171 (44.5%) respondents strongly agreed that capping the interest rates made banks to hedge against lending maize farmers hence hindering the majority from security credit to enhance maize production. Different from that was a group of 22 (5.7%) and 2 (0.6%) respondents who were undecided and disagreed respectively that capping the interest rates made banks to hedge against lending maize farmers hence hindering the majority from security credit to enhance maize production. Regarding the policy of hidden charges on loans by banks, 190 (49.5%) respondents strongly agreed while 183 (47.7%) agreed that banks had hidden charges that they levied, which influenced uptake of agricultural loans by maize farmers. Contrary to that was a group of 9 (2.3%), and 2 (0.5%) respondents who disagreed and were undecided respectively that banks had hidden charges that they levied, which influenced uptake of agricultural loans by maize farmers. Out of 384 respondents, 205 (53.4%) strongly agreed while 176 (45.8%) agreed that there was a tendency of banks to auction assets of the loanees upon default of loan repayment. Different from that was 2 (0.5%) and 1 (0.3%) who

were undecided and strongly disagreed that there was a tendency of banks to auction assets of the loanees upon default of loan repayment.

4.5.3. Farmers income and uptake of agricultural loans

Table 11: engage in other economic activities

	Frequency	Percent
Yes	133	34.6
No	251	65.4
Total	384	100.0

In table 11, it is 251 (65.4%) respondents denied engaging in other economic activities other than maize farming. On the contrary, 133 (34.6%) respondents observed that they engaged in other economic activities other than maize farming in Kwanza Sub-County. This indicated that the majority of farmers might have failed to access or secure agricultural credit to enhance maize farming because of they did not have alternative income to increase their account turnovers.

Table 12: properties owned other than the land the farmer lives/occupies

	Frequency	Percent
None	251	65.4
Other land	71	18.5
agricultural machinery	12	3.1
Livestock	34	8.6
Other properties (vehicles, business premises and others)	16	4.4
Total	384	100.0

In order to establish other properties other than the land where the farmers lives/occupies, 251 (65.4%) respondents did not have any other property while 71 (18.5%) respondents observed that they owned other land different from the one they occupy. Different from that was a group of 34 (8.6%), 16 (4.4%) and 12 (3.1%) respondents who stated that they owned livestock, other properties and agricultural machinery respectively. The situation where farmers owned or had

access and control to other properties other than the land they occupy or operate in provided an insight on their abilities to earn extra income other than that from maize farming and this influenced the uptake of loans.

Table 13: Statements related to farmers income and its influence on uptake of loans

Statement	Very great extent		Great extent		Moderate extent		Low extent		Very low extent	
	F	%	F	%	F	%	F	%	F	%
Level of income plays a critical role in credit application	262	68.9	122	31.8	0	0.0	0	0.0	0	0.0
Gender influence ability to access and secure credit	0	0.0	0	0.0	11	2.9	126	32.8	247	64.3
Size of land under agriculture or related activities influence uptake of agricultural loans	108	28.1	276	71.9	0	0.0	0	0.0	0	0.0
Credit turnover as measured by ability to save influences loan uptake ability by maize farmers	105	27.3	279	72.7	0	0.0	0	0.0	0	0.0

In the findings highlighted in table 13, 262 (68.9%) respondents stated that there was a very great extent as to how the level of income of maize farmers played a critical role in credit application. Another group of 122 (31.8%) respondents observed that there was a great extent as to how the level of income of maize farmers played a critical role in credit application. In terms of gender and uptake of agricultural loans, 247 (64.3%) and 126 (32.8%) indicated that there was a very low extent and low extent respectively that gender influenced ability to access and secure credit. Out of 384 respondents, 276 (71.9%) observed that there was a great extent while 108 (28.1%) observed that there was a very great extent to which size of land under agriculture or related activities influenced uptake of agricultural loans. In this case, farmers who had large tracts of land had a higher chance of securing agricultural loans compared to maize farmers with small

sizes of land. In terms of the ability of farmers to save, 279 respondents, which represent 72.7% agreed that credit turnover as measured by ability to save influenced loan uptake ability by maize farmers. Out of 384 respondents, 105 (27.3%) strongly agreed that credit turnover as measured by ability to save influenced loan uptake ability by maize farmers. This was an indication that farmers who could save money frequently in their bank accounts had a high chance to secure agricultural loans compared to farmers who did not have the saving culture.

4.5.4. Land ownership rights and uptake of agricultural loans

This section presents results that relate to the influence of land ownership rights on agricultural loans.

Table 14: land ownership systems among maize farmers in Kwanza Sub-County

	Frequency	Percent
self-owned	107	27.9
family owned	235	61.2
community owned	1	.3
farmers association	20	5.2
Rented	21	5.5
Total	384	100.0

In the findings presented in table 14, 235 (61.2%) of farmers indicated that they owned lands that belonged to their families. In such cases, it is difficult for such farmers to secure agricultural credit because most of such lands have one title, which could not help an individual with a portion to secure a loan. Out of 384 respondents, 107 (27.9%) stated that they owned the land individually (mostly purchased); such lands give the holder a privilege to control and manage the resources in it hence increasing chances to secure loans using it. Farmers with community and rented lands (0.3% and 5.2% respectively) could not facilitate a farmer to secure agricultural loans because in such cases, farmers do not have control and the right to use the title as a security to secure loans.

Table 15: Statements related to influence of land ownership systems on uptake of loans by maize farmers

Statements	Very great extent		Great extent		Moderate extent		Low extent		Very low extent	
	F	%	F	%	F	%	F	%	F	%
Self-owned land facilitates access to credits	43	11.2	311	81.0	27	7.0	3	0.8	0	0.0
Family land facilitates access to credits	0	0.0	25	6.5	339	88.3	18	4.7	2	0.5
Community land facilitates access to credits	0	0.0	0	0.0	7	1.8	276	71.9	101	26.3
Farmers' association-owned land facilitates access to credits	0	0.0	37	9.6	330	85.9	17	4.4	0	0.0
Rented land facilitates access to credits	0	0.0	0	0.0	0	0.0	36	9.4	348	90.6
It is easier to obtain loan with titled land than unsecured ones	42	10.9	342	89.1	0	0.0	0	0.0	0	0.0

In the findings presented in table 15, 311 (81.0%) respondents indicated that self-owned land facilitated access to agricultural loans to a great extent while 43 (11.2%) respondents stated that self-owned land facilitated access to agricultural loans to a very great extent. This meant that maize farmers who owned land as individuals had a high ability to access financial credit to enhance maize farming. Out of 384 maize farmers who took part in the study, 27 (7%) and 3 (0.8%) of the respondents indicated that there was a moderate and low extent respectively to which self-owned land facilitated access to agricultural loans.

In terms of family land, 339 (88.3%) respondents indicated that there was a moderate extent to which family land facilitated access to financial credit by maize farmers to enhance maize productivity. In such a case, all the family members have to agree for the title to be used by a member to secure agricultural credit using it as a security; in most cases its relies on the agreement and understanding of the family members. Giving different views, 25 (6.5%)

respondents stated that there was a great extent to which family land facilitated access to financial credit to be used by maize farmers to enhance the practice of maize farming. Different from that was a group of 18 (4.7%) and 2 (0.5%) which stated that there was a low extent and a very low extent to which family land facilitated access to financial credit to be used by maize farmers to enhance the practice of maize farming.

Out of 384 farmers who took part in the study, 276 (71.9%) respondents stated that there was a low extent to which community land facilitated access to financial credit to be used by maize farmers to enhance the practice of farming. In another case, 101 (26.3%) respondents observed that there was a very low extent to which community land facilitated access to financial credit to be used by maize farmers to enhance the practice of farming.

Giving their views on land owned by farmers' association, 330 (85.9%) respondents indicated that there was a moderate extent to which such land facilitated access to financial credit to be used by maize farmers to enhance the practice of farming. Relative to that was a group of 37 (9.6%) and 17 (4.4%) respondents who observed that there was a great extent and a low extent respectively to which farmers' association land facilitated financial credit to be used by maize farmers to enhance the practice of farming.

In another case, 348 (90.6%) and 36 (9.4%) respondents stated that there was a very low extent and low extent respectively to which rented land facilitated access to financial credit to be used by maize farmers to enhance the practice of farming. Rented land according to respondents did not facilitate access to financial credit to be used by maize farmers to enhance the practice of farming.

Concisely, 342 (89.1%) of the respondents observed that it was easier to obtain loan with titled land than lands with no title deeds. Giving almost the same views, 42 (10.9%) respondents stated that that it was easier to obtain loan with titled land than lands with no title deeds.

4.6. Inferential statistical findings

This section presents findings that establish the association between independent and dependent variables; in this case, the association between farmers' loan experience, loaning policy, farmers' income and land ownership as they relate to loan uptake. Multivariate Linear Regression analysis was conducted as shown

Table 16: Analysis of variance between uptake of loans, farmers' loan experience, loaning policy, farmers' income and land ownership

ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	41.752	4	10.438	6.461	.000 ^a
Residual	463.683	379	1.223		
Total	505.435	383			

a. Predictors: (Constant), farmers' income, land ownership rights, loaning policy, loan experience

b. Dependent Variable: Uptake of Agricultural Loans

From the multivariate regression analysis in table 16, it is evident that the regression model (in chapter 3) is sufficient to assess the influence farmers' income, loaning policy, loan awareness, and land ownership rights had on uptake of loans by maize farmers in Kwanza Sub-County,

Trans-Nzoia County. Having a p-value of 0.000 (shown in table 16), which is less than the level of significance of 0.05 adopted by the study indicate that the regression analysis is effective and can be used to determine how farmers' income, loaning policy, loan awareness, and land ownership rights influence uptake of loans by maize farmers. In this case, the null hypotheses was rejected and the alternative hypotheses adopted such that farmers' income, loaning policy, loan awareness and land ownership rights had a statistical significance on uptake of agricultural loans by maize farmers. Additionally, F-computed using SPSS is 6.461 (shown in table 16) and F-critical is 2.6049 (from the F-distribution tables- $df_1=3$ and $df_2=382$). Considering that F-computed was greater than F-critical, it strengthens the fact that farmers' income, loaning policy, loan awareness, and land ownership rights influence uptake of loans by maize farmers and hence statistical significance.

Table 17: Regression analysis between uptake of loans, farmers' loan experience, loaning policy, farmers' income and land ownership

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.743 ^a	.862	.704	1.271

a. Predictors: (Constant), farmers' income, land ownership rights, loaning policy, loan experience

In table 17, the value of R indicates the measure of quality of prediction that can be done on the dependent variable using the independent variable; the same value also measures the strength of association between uptake of agricultural loans farmers' income, loaning policy, loan awareness and land ownership rights from the table, having a positive value of R shows that the quality of

prediction is high and reliable such that independent variable could be used to predict the status of dependent variable with time.

Table 18: Multiple Linear Regression between uptake of loans, farmers' loan experience, loaning policy, farmers' income and land ownership

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.686	.199		8.618	.000
	Farmers' income	.519	.062	.709	2.642	.001
	Loaning policy	.647	.059	.761	2.957	.000
	Loan experience	.668	.053	.784	3.631	.000
	Land ownership rights	.492	.076	.586	1.958	.003

a. Dependent Variable: Uptake of Agricultural Loans

From the findings presented in table 18, it is shown that loan experience and awareness had a great influence on uptake of agricultural loans compared to farmers' income, loaning policy and land ownership rights. Loaning policy, farmers' income and land ownership rights influenced uptake of agricultural loans in that order and this was determined by the beta coefficients (strength of correlation) between the independent and independent variable.

In the regression model in chapter three, the association between dependent and independent variable was shown by the following equation

$$Y = \beta_0 + \beta_1 X_1 Z + \beta_2 X_2 Z + \beta_3 X_3 Z + \beta_4 X_4 Z + \mu_i$$

In order to predict or estimate uptake of agricultural loans as denoted by Y, the unstandardized beta coefficients, the measure of each variable, and the measure of moderating variable are substituted.

$Y = 1.686 + .519 X_1Z + .647X_2Z + .668X_3Z + .492 X_4Z + \mu_i$ this equation could be used to plot the line of best fit which shows the association between independent and independent variable assuming that the measure of each independent variable, moderating variable influence on each independent variable and error terms are known.

4.7. Qualitative findings from interviews

This section presents findings/responses given by respondents during the interviews, responses from agricultural extension officers and credit managers in banks were tasked to give their views on some of the open-ended questions in the interview schedule.

4.7.1. Thematic analysis: Interview responses from agricultural extension officers

Themes	Sub-themes	Responses
Farmers' loan experience and uptake of loans	What is your take towards farmers' loan experiences/awareness and agricultural loan uptake?	Many farmers who had experiences with auctions of personal assets for loan repayment defaulting, or lack of information about loan products will shy away from securing financial credit in the future.
Loaning policy and uptake of loans	In your own opinion, how do loaning policy influence maize farmers' access to agricultural loans?	Interest rates caps, hidden charges on loans, repayment procedures, and other information on loan products influence the ability of maize farmers to secure loans.
Farmers' income and uptake of loans	Comment on the effect of farmer's level of income on demand and access of agricultural loans by maize farmers in Kwanza Sub-County?	Farmers who have an alternative source of income have a culture of saving, which allows them to access financial credit to enhance maize farming
Land ownership systems and uptake of loans	How does land ownership rights influence demand and access of agricultural loans by maize farmers?	Farmers who own farms individually have a high chance of securing loans, community/family land has a low chance of facilitating credit for users. Rental land has no chance to be used to secure loans for farming

4.7.2. Thematic analysis: Interview responses from credit managers in selected banks

Themes	Sub-themes	Responses
Farmers' loan experience and uptake of loans	What is your take towards farmers' loan experiences/awareness and agricultural loan uptake?	Most farmers have little or no knowledge of available loan products because they do not belong in any formation where they can learn and rarely visit banks for loan awareness
Loaning policy and uptake of loans	In your own opinion, how do loaning policy influence maize farmers' access to agricultural loans?	After the interest cap law by Kenyan Government, most banks hedged against lending especially to farmers; instead opt to buy government bonds and securities, which are secure and profitable
Farmers' income and uptake of loans	Comment on the effect of farmer's level of income on demand and access of agricultural loans by maize farmers in Kwanza Sub-County?	Income is a function of consumption and saving; the higher the income, the higher the amount allocated for saving and hence the ability to secure loans
Land ownership systems and uptake of loans	How does land ownership rights influence demand and access of agricultural loans by maize farmers?	Farmers having lands with titles have higher chances of securing financial credit

4.8. Discussion of Findings

From the findings presented, the majority of farmers practiced maize farming for commercial and for domestic purposes; notably, in table 6, 205 (53.4%) and 119 (31.1%) practiced maize farming for commercial and for both domestic and sale respectively. It was expected that such farmers having been done farming for over 6 years (90.3% of farmers) should have explored the opportunity of securing financial credit to enhance maize farming. The past experience maize farmers had with loan uptake might have influenced them negatively to avoid securing financial credit to enhance the practice of maize farming. For instance, in table 7, 303 (78.9%) of maize farmers confirmed having securing loans in the past; however, 308 (80.2%) observed that they would never apply for financial credit in the future because of the bad experience they had. Upon

for further research inquiry, 271 (70.6%) maize farmers indicated that they were auctioned by financial institutions for failed to repay their loans in full and for that reason, they were discouraged to secure loans in future to enhance maize farming (see table 8).

In the interviews, agricultural extension officers indicated that most farmers shy away from securing financial credit because of most of the banks auctioned their assets largely because farmers did not have enough information about loan products; hence, securing loans that were not convenient with their occupation. Credit managers supported the move where farmers were shying away from securing financial credit because of auctions; most of the farmers did not belong to any formation known to the bank where they could acquire information related to loan products.

The study by Nawai and Shariff (2010) was in line with the findings from maize farmers and interview responses of agricultural extension officers and credit managers from banks. Nawai and Shariff (2010) observed that most farmers were disqualified from accessing financial credit because of lack of information, illiteracy, and failure to adopt to loaning policies. Specifically, banks have had a tendency of applying stringent requirements which a common smallholder farmer cannot meet, a few who met the requirement always defaulted on repayment. A survey conducted by Kung'u (2011) in West lands in Nairobi to study factors influencing credit access and uptake by SMEs revealed that most SMEs were not willing to apply for loans due to past painful experience they went through repaying loans with huge interests. There was also a significant relationship between loan collaterals and demand.

Loaning policy contributed immensely in influencing farmers to secure financial credit to enhance the practice of maize famers. In table 10, 98.9% of maize famers indicated that interest rates charged on loans discouraged them to secure financial credit. Their views were genuine

because since the Kenyan Government through the Central Bank capped interest rates, most investors avoided securing financial credit because the cost of capital was expensive (Central Bank of Kenya, 2018). Further, all the respondents (see table 10) indicated that collaterals demanded by banks were unrealistic for maize farmers to provide hence discouraging them to secure financial credit. Out of 373 (97.2%) supported the fact that banks pegged hidden charges on loans hence making maize farmers to shy away from securing financial credit to enhance farming. For that reason, 350 (91.1%) observed that loaning policy by banks was not friendly.

Agricultural extension officers in the interviews supported the findings from maize farmers; they added that interest rates caps, hidden charges on loans, repayment procedures, and other information on loan products influenced the ability of maize farmers to secure loans. Credit managers echoed the views of maize farmers and agricultural extension officers on loaning policy, they stated that after the interest cap law by Kenyan Government, most banks hedged against lending especially to farmers; instead opt to buy government bonds and securities, which were secure and profitable. According to a study by Matavire (2013) on the challenges SMEs go through in accessing loans from financial institution in Zimbabwe revealed that most SMEs were unable to obtain credits because of restrictive requirements demanded by the financial institutions. Nawai and Shariff (2010) asserted banks have had a tendency of applying stringent requirements which a common smallholder farmer cannot meet.

In the findings, 65.4% of maize farmers as shown in table 11, did not have an alternative economic activity that generated more income, they relied wholly on maize farming. This situation hindered many from accessing financial credit because they did not have a saving culture, their credit turnover was always low, hence failed to meet banks' requirements for uptake of loans see table 11. The same population (65.4%) of maize farmers did not own any

other asset apart from the land they lived in or they owned, depriving them the opportunity to secure financial credit from banks which require high credit turnover before offering loans.

In the interviews, agricultural extension officers' responses were in line with the findings by maize farmers in such a way that alternative source of income for farmers encouraged a culture of saving, which allowed them to access financial credit to enhance maize farming. Giving a theoretical explanation, credit managers observed that Income was a function of consumption and saving; the higher the income, the higher the amount allocated for saving and hence the ability to secure loans. This was a principle of Keynesian theory of Income, which defined the relationship between income, consumption and saving (Keynes, 2016). According to a study by Nwaru (2011), most farmers fail to have enough income because the cost of farm inputs is usually high and they usually sell their produce to unscrupulous middlemen who offer low prices after harvesting hence lowering their disposable income. A study by Odhiambo (2012), supported the findings of this study and that by Nwaru (2011) such that maize farming according to the author suffered the problem of high price volatilities such that during harvesting time, prices fall steeply while after that season, prices increase hence leaving farmers with little or no income to spend in the future after harvesting time. For this reason, most maize farmers fail to repay their loans in time while others, as in the amount produced, a rise in farmers' income leads to slower debt growth meaning that farmers will be able to repay their loans in time (Odhiambo, 2012).

Land ownership rights determined access and control to farm, which was a factor of production. In the findings especially in table 14, out of 384 maize farmers who took part in the study, 235 (61.2%) respondents stated that they practiced maize farming in a family land, which was not easy to use as collateral to secure financial credit. The rationale behind it was that, it was difficult

to convince all the family members to understand and approve the usability of the land title or agreement as a collateral to secure financial credit and for that reason, many maize farmers failed to secure loans. farmers with rented land 5.5% had a very low chance of securing financial credit because they did not have a title or control of the assets in the land to be used as a security to secure financial credit to enhance farming.

In the interviews, credit managers stated that farmers having lands with titles had higher chances of securing financial credit compared farmers with land that had no titles. Specifically, agricultural extension officers observed that farmers who owned farms individually had a high chance of securing loans, community/family land had a low chance of facilitating credit for users. Rental land had no chance to be used to secure loans for farming.

Feder (2016) established a connection between land tenure and credit access. The author argued that if title provides land security then land can easily be transferred without further questions on the ownership. He further argued that the combination of the two facts makes land becoming collateral hence farmers in Thailand who possessed title deeds had greater chances of obtaining large loans with reduced interest rates. Another study in Gambia by Hayes (2016) indicates that land ownership enhances individual rights that might lead to greater borrowing and investing, resulting in better productivity.

Credit supply is enhanced willingness by lenders to offer credits if borrowers have the capacity to attach secured land as security for the loan. With titled and secured land as security for the loan, lenders can legally repossess the same land in case of loan default (Hazell, 2010). Additionally, the threat of auctioning land can act as driving force for the borrower to repay the loan under the agreed terms. Therefore, farmers with titled and secure land might often find it

easier to access credit due to documentation of land tenancy and buyers might not worry about claims of fraud (Carter & Olinto, 2013).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.1.Introduction

This section presents a summary of findings, which include demographic characteristics of respondents, farmers' loan experience, loaning policy, farmers' income, and land ownership rights. Conclusion and recommendations based on the study feature in this section.

5.2.Summary of the findings

5.2.1. Farmers' loan experience and uptake of agricultural loans

Out of 384 maize farmers who part in the study, 205 (53.4%) and 119 (31.1%) practiced maize farming for commercial and for both domestic and sale respectively. According to 90.3% of maize farmers, who had done farming for over 6 years, past experience with loan uptake influenced them negatively to avoid securing financial credit to enhance the practice of maize farming. For instance, in table 7, 303 (78.9%) of maize farmers confirmed securing loans in the past; however, 308 (80.2%) observed that they would never apply for financial credit in the future because of the bad experience they had. Upon probing, 271 (70.6%) maize farmers observed that they were auctioned by financial institutions for failing to repay their loans in full and for that reason, they were discouraged to secure loans in future to enhance maize farming.

5.2.2. Loaning policy and uptake of agricultural loans

Almost all maize farmers who took part in the study (98.9%) indicated that interest rates charged on loans made them to shy away from securing financial credit. Further, all the respondents (see table 10) observed that collaterals demanded by banks were unrealistic for maize farmers to provide hence discouraging them to secure financial credit. Out of 373 (97.2%) supported the

fact that banks attached hidden charges on loans hence making maize farmers to shy away from securing financial credit to enhance farming. For that reason, 350 (91.1%) observed that loaning policy by banks was not friendly.

5.2.3. Farmers' income and uptake of agricultural loans

In the findings, 65.4% of maize farmers as shown in table 11, did not have an alternative economic activity that generated more income, they relied only on maize farming. The same population (65.4%) of maize farmers did not own any other asset apart from the land their lived in or they owned, depriving them the opportunity to secure financial credit from banks which require high credit turnover before offering loans.

5.2.4. Land ownership rights and uptake of agricultural loans

In the findings especially in table 14, 235 (61.2%) respondents stated that they practiced maize farming in a family land, family lands were hardly used as use a collateral to secure financial credit. Farmers with rented land 5.5% had a very low chances of securing financial credit because they did not have a title or control of the assets in the land to be used as a security to secure financial credit to enhance farming.

5.3. Conclusions

Most farmers lacked information about loan products and that is why they made uninformed decision regarding securing loans. further, few farmers had direct connections with banks either by having bank accounts or benefiting from training offered by financial institutions. Most farmers were influenced by attitudes from others who had unsuccessful loan uptake and repayment processes with banks.

Banks are business entities, which are out to make profit and not to make a socio-economic impact especially on maize farmers. After capping interest rates by government of Kenya, all banks instituted restrictions on loans especially on maize farmers and other risky operators who did not have a stable income in the market.

Income determine the ability of maize farmers to secure financial credit to be used to enhance farming. Further, consumption and savings are determined by income; this means that maize farmers with alternative income apart from that accrued from farming had a high chance of securing loans.

Self-owned land allowed users secured financial credit compared to those who rented, utilized family land, community, and association land. Land ownership rights influenced socio-economic status of farmers

5.4.Recommendations

5.4.1. Recommendations for Policy and Practice

Financial institutions should consider educating an create awareness especially loan products to allow farmers and other consumers to make informed decisions about loan products that fit their occupation and status.

The government of Kenya through the legislature should review the interest rate cap act, to allow a situation where forces of demand and supply determine interest rates and hence uptake of loans. The Central Bank of Kenya should regulate the practices of banks to prevent consumer exploitation especially on hidden charges on loans and on restrictive policies.

Maize farmers should be encouraged to engage in alternative sources of income apart from farming to encourage a culture of saving hence have it easy when securing loans in the future.

The government should consider zero rating farm inputs to ensure farmers make profits after harvesting their produce.

The government should fast track the process of giving title deeds to all maize farmers to allow them secure financial credit easily.

5.4.2. Suggestions for Further Research

Socio-economic factors are not the only factors influencing uptake of agricultural loans, in the future, scholars should consider exploring other factors such as institutional and cultural factors influencing uptake of loans for maize farmers.

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APPENDICES

APPENDIX I: TRANSMITTAL LETTER

Eric Ngetich

Dear Respondent,

My name is **Eric Ngetich**, currently a student at University of Nairobi pursuing a **Master of Science in project planning and management**. I am undertaking a research project titled “factors influencing uptake of agricultural loan by maize farmers in Kwanza Sub County”. The information that will be provided is confidential and will be used for academic purposes only.

Your participation is voluntary.

Thank you in advance

Yours sincerely,

Eric Ngetich

APPENDIX II: INTERVIEW SCHEDULES

Background information

Name of the officer.....

Ward.....

Date of interview.....

Gender.....

1. In your own opinion how does land ownership rights influence demand and access of agricultural loans by maize farmers?
2. Comment on the effect of farmer’s level of income on demand and access of agricultural loans by maize farmers in Kwanza Sub-County?
3. What is your take towards farmers’ loan experiences/awareness and agricultural loan uptake?
4. In your own opinion, how do loaning policy influence maize farmers’ access to agricultural loans?

APPENDIX III: STUDY QUESTIONNAIRE

SECTION A: BACKGROUND INFORMATION

1. What is your gender?

Male

Female

2. What is your age bracket?

Below 18 Years

18 – 35 Years

36 – 50 Years

51 – 65 Years

Above 65Years

3. What is your income per month?

Less than Ksh. 6,000

Ksh. 6,000-18,000

Ksh. 18,000-30,000

Above Ksh. 30,000

4. What is the purpose of doing maize farming?

Food

Commercial

Both

5. What is the size of your farm?

Below 0.5 acres

0.5 – 2 acres

3– 5 Acres

6– 10 Acres

11– 20 Acres

Above 20 Acres

6. For how long have you been doing farming?

Below 2 Year

6- 5 Years

6 – 10 Years

11- 15 Years

Above 15Years

SECTION B: LAND OWNERSHIP RIGHTS AND UPTAKE OF AGRICULTURAL

CREDITS

1. Indicate the ownership of land you use in maize farming

Self-owned

Family owned

Community owned

Farmer association

Rented

2. (a)How does land ownership influence demand and access of agricultural loans by maize farmers in Kwanza Sub-County?

Very much

Not very much

Not at all

(b) Indicate the extent to which the following attributes on land ownership influences the demand and access of agricultural credits by maize farmers in Kwanza Sub-County, in a scale of 1-5, where 5= very high extent, 4= high extent, 3= moderately high extent, 2= low extent, 1= very low extent.

(Use a tick (✓) or X to mark the applicable box)

Statements	5	4	3	2	1
Self-owned land promotes access to credits					
Family land promotes access to credits					
Community land promotes access to credits					
Farmers' association-owned land promotes access to credits					
Rented land promotes access to credits					
It is easier to obtain loan with titled land than unsecured ones					

SECTION C: FARMERS' INCOME AND UPTAKE OF AGRICULTURAL CREDITS

1. Do you engage in other economic activities apart from farming?

Yes

No

2. Which of the following properties/assets do you own? You can select more than one

Land

Agricultural machinery

Livestock

3. Indicate the extent to which the following statements on level of income influences the demand and access of agricultural credits by maize farmers in Kwanza Sub-County, in a scale of 1-5, where 5= very high extent, 4= high extent, 3= moderately high extent, 2= low extent, 1= very low extent.

(Use a tick (✓) or X to mark the applicable box)

Statements	5	4	3	2	1
Level of income plays a critical role in credit application					
Gender influence ability to access and secure credit					
Size of land under agriculture or related activities influence uptake of agricultural loans					
Ability of farmers to engage in complementary economic activities increase the ability to secure loans					
Credit turnover as measured by ability to save influences loan uptake ability by maize farmers					

4. Specify the number of acres you have put under maize cultivation

- Less than 10 acres
- 11-20 acres
- 21-30 acres
- 31-40 acres
- 41-50 acres
- Above 50 acres

5. Indicate whether your farm under maize cultivation is centralized or distributed?

- Centralized
- Distributed

6 (a)How does size of land under cultivation influence demand and access of agricultural loans by maize farmers in Kwanza Sub-County?

- Very much
- Not very much
- Not at all

(b)Indicate the extent to which the following statements on size of and under cultivation influences the demand and access of agricultural credits by maize farmers in Kwanza Sub-County, in a scale of 1-5, where 5= very high extent, 4= high extent, 3= moderately high extent, 2= low extent, 1= very low extent.

(Use a tick (√) or X to mark the applicable box)

Statements	5	4	3	2	1
Small scale farmers do not apply for agricultural loans due to their size of land under cultivation					
Farmers with large tracts of land apply for agricultural loans					
Farmers doing large scale farming have advantage over small scale ones in terms of access to loans					
Centralized farms can play role in accessing for loans than distributed small pieces of farms.					
Being consistent in maize farming every year can boost chances of access to credit in financial institutions					

SECTION D: FARMERS' EXPERIENCE WITH LOAN UPTAKES S OF FORMAL

CREDIT

1. Have you ever applied for a loan in the past?

Yes

No

2. From your past experience in loan application and repayment, would you apply for another loan in future?

Yes

No

3 (a)How does farmer loan experiences and perceptions towards applications of formal credit influence demand and access of agricultural loans by maize farmers in Kwanza Sub-County

Very much

Not very much

Not at all

(b) Indicate the extent to which the following statements on farmers' loan experiences and awareness towards application of formal credit influences the demand and access of agricultural credits by maize farmers in Kwanza Sub-County, in a scale of 1-5, where 5= very high extent, 4= high extent, 3= moderately high extent, 2= low extent, 1= very low extent.

(Use a tick (√) or X to mark the applicable box)

Statements	5	4	3	2	1
Interest rates charged on past loans can affect farmers demand for future credits					
Loan collateral asked by banks in past applications can discourage farmers demand for loans					
Lending application procedures in Kenya's financial institutions are customer friendly					
Default history by farmers can make them shy away from applying for loans					
Repayment rules hinders access to loans					
Experience with personal property auction occasioned by loan default can discourage future loan application					

SECTION E: LOANING POLICY AND FARMERS’S LOAN UPTAKE OF

AGRICULTURAL CREDITS

1. To what extent do you agree or disagree with the following statement as it applies to beliefs shaping loan uptake from financial institutions, “considering the capped interest rates, financial institutions only hedge against lending maize farmers”

Very great extent

Great extent

Moderate extent

Low extent

No extent at all

2. Respond to the following statements as they apply regarding to perception/attitudes towards uptake of agricultural credit

Statements	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Financial institutions usually have hidden charges that they levy making loans expensive					
There is always a tendency of financial institutions to auction assets of loanees					
Loans are usually secured by those in formal employment					
It is too risky to secure loans for agriculture					
Very few have succeeded from securing loans to enhance agricultural production					

SECTION F: MEASUREMENT OF UPTAKE OF AGRICULTURAL CREDIT

1. State the highest amount of loan you have ever obtained in ksh?

Less than 100000

100000- 500000

Above 500000

2. How frequent to you borrow money from your bank?

Once per year

Twice per year

Three times per year

More than three times per year

3. Indicate the extent to which the following socio-economic factors influences the demand and access of agricultural credits by maize farmers in Kwanza Sub-County, in a scale of 1-5, where 5= very high extent, 4= high extent, 3= moderately high extent, 2= low extent, 1= very low extent.

(Use a tick (√) or X to mark the applicable box)

Statements	5	4	3	2	1
Land tenancy or ownership					
Level of income of farmers					
Farmers' loan experiences and perceptions towards application of formal credit					
Size of land under maize cultivation					

APPENDIX IV: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MR. ERICK KIPRUTO NGETICH
of UNIVERSITY OF NAIROBI , 4380-30200
KITALE, has been permitted to conduct
research in *Transnzoia County*

Permit No : NACOSTI/P/18/76949/24725
Date Of Issue : 18th August, 2018
Fee Received : Ksh 1000

on the topic: **INFLUENCE OF
SOCIO-ECONOMIC FACTORS ON THE
UPTAKE OF AGRICULTURAL CREDIT BY
MAIZE FARMERS IN KWANZA
SUB-COUNTY, KENYA**

for the period ending:
17th August, 2019

.....
**Applicant's
Signature**



[Signature]
**Director General
National Commission for Science,
Technology & Innovation**

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REPUBLIC OF KENYA



**National Commission for Science,
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**APPENDIX V: NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND
INNOVATION**



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NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/76949/24725**

Date: **18th August, 2018**

Erick Kipruto Ngetich
University of Nairobi
P.O Box 30197-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Influence of socio-economic factors on the uptake of agricultural credit by maize farmers in Kwanza Sub-County, Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Trans Nzoia County** for the period ending **17th August, 2019**.

You are advised to report to **the County Commissioner and the County Director of Education, Trans Nzoia County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.


**BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Trans Nzoia County.

The County Directors of Education
Trans Nzoia County.