

**INFLUENCE OF SELECTED FACTORS ON CHOICE OF LIVELIHOOD
STRATEGY AMONG PERI-URBAN SMALLHOLDER FARMERS IN
LANET DIVISION OF NAKURU EAST SUB-COUNTY, KENYA**

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**A Thesis Submitted to the Graduate School in Partial Fulfillment of the Requirements
for the Award of Master of Science Degree in Community Studies and Extension of
Egerton University**

EGERTON UNIVERSITY

APRIL, 2018

DECLARATION AND RECOMMENDATION

Declaration

This research thesis is my original work and to the best of my knowledge has not been presented in any university for award of any degree.

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Recommendation

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DEDICATION

This work is dedicated to my husband Dr. Mbuthia Ngunjiri, sons Derrick and George; and daughter Esther Ashely.

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Glory to God Almighty for the opportunity to further my education and for the Divine provision of good health, time, finance and spiritual nourishment; honored be His name for ever. I give thanks to Egerton University for giving me a chance to study in this institution. Special thanks to my supervisors Dr. Milcah Mulu-Mutuku and Dr. Lydia Nkatha Kinuthia for their guidance, patience and encouragement whenever the terrain proved rough; without you this study would never have been. To my colleagues, the Masters Students (2010 Class) in the Department of Applied Community Development Studies of Egerton University; together we toiled as a group and surely unity is strength. I wish also to thank George Kimiti of Jomo Kenyatta University of Agriculture and Technology for his guidance towards this study. May God bless you very much. I would like to thank the smallholder farmers in Lanet Division where study was carried out. Finally, I wish to thank all my friends, relatives, fellow colleagues of Rift Valley Institute of Science and Technology who have been extremely helpful in their advice and encouragement on the successful draft of this study. Your support, prayers and love helped me pursue this study.

ABSTRACT

Smallholders' farmers in Kenya have over the years been faced with challenges that constantly put pressure on their livelihoods. However, the greatest threat to agriculture as a source of livelihood in the developing countries is rapid urbanization due to population growth, urban expansion and informal settlements. This study investigated market accessibility, land size, credit accessibility and social status among factors that influence peri-urban smallholder farmer's choice of livelihood strategy as an adaptation to reduced land holding. The study focused on Lanet Division of Nakuru East Sub-County, Kenya. Lanet Division was purposely selected based on its rapid population growth rate and its proximity to rapidly growing Nakuru Town, Kenya. The study used *ex post facto* correlation design. Out of 2,410 smallholder farmers in Lanet Division, a sample of 137 smallholder farmers was selected through simple random sampling technique. The study was guided by Rational Choice Theory. Data was collected using a questionnaire which was administered to the household heads. Validity of the data collection tool was ascertained by consulting two experts in the Department of Applied Community Development Studies. The instrument was piloted using a sample of 30 randomly selected smallholder farmers in Barut Division in Nakuru West Sub-County. Cronbach Coefficient was computed yielding a value 0.7725 which was accepted. Statistical Package for Social Science (SPSS) version 23 was used for data analysis. Data was analyzed using both descriptive and inferential statistics. The descriptive statistics used were percentages, frequencies, means and standard deviation, while inferential statistics used was Logistic Regression. The level of significance for acceptance or rejection of the hypotheses was set at $P < 0.001$ level. The study established that credit accessibility, land size and social status were significant factors influencing small holder farmers' choices of livelihood strategy in Lanet Division, Nakuru East Sub-County, Kenya. However, market accessibility was found to be statistically insignificant in smallholder farmers' livelihood strategy choices. The result of the study is envisaged to give a pointer to link between factors influencing livelihood choices strategy. This information will offer insights adding to the body of knowledge to Ministry of Agriculture, Livestock and Fisheries, policy makers and peri-urban planners. It will also provide useful information to scholars in community development.

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ABBREVIATIONS AND ACRONYMS

DAO	District Agricultural Officer
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
ILO	International Labour Organization
KNBS	Kenya National Bureau of Statistics
MoA	Ministry of Agriculture
NDSP	Nakuru District Strategic Plan
SPSS	Statistical Package for Social Science
UN	United Nations
UNDP	United Nation Development Programme
UNHABITAT	United Nations Habitat
UNWUP	United Nations World Urbanization Prospects

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Farming is the single largest source of livelihood in the world, where about 40% of today's global population derives its livelihood. Farming is also the largest source of income and jobs for poor rural households providing jobs for 1.3 billion smallholder farmers and landless workers (Food and Agriculture Organization [FAO], 2011). For the developing world's 5.5 billion people, about 3.8 billion live in peri-urban and in rural areas, where farming remains the main source of livelihoods (International Labour Organization [ILO] 2011; FAO, 2011). It is therefore the backbone of not only livelihoods in Africa but also the continent's economy where about 70% of Africans and roughly 80% of the continent's peri-urban and rural dwellers depend mainly on it for their livelihood (FAO, 2011).

The World Bank (2010) states that, Smallholder farms account for about 85% of the estimated 525 million farms worldwide, each occupying an average of about of 2 hectares of land and was practiced on about 60% of the world's arable land. Asia, Africa, Europe and Americas account for 87%, 80%, 4% and 1% of smallholder farming activities respectively. World Bank continues to report that smallholder farming directly supports about 2 billion livelihoods globally, and that the smallholder farmer's produce about 25%, 80% and 75% of the global, Africa's and East Africa's food demands respectively.

According to World Bank (2010), the global mean farm size- on arable land has been declining rapidly since 1950s. For instance, in the 1950s, the mean farm size was 12.16 acres per farmer. The mean farm size fell to about 1.25 acres by the year 2006, which was estimated to reduce to about 0.5 acres per person by the year 2040. FAO (2010) also noted that, the mean farm size in the United States, Latin America, Europe, Asia, Africa, Sub-Saharan Africa and Kenya stood at 446 acres, 279.25acres, 67.5acres, 4.5acres, 4acres, 6acres and 4.65acres by 2009 respectively. The implication of declining farm size is that more and more farmlands are being converted for non-agricultural use.

According to United Nations World Urbanization Prospectus (UNWUP) (2006), factors accounting for the declining mean farm size include rapid population growth rate and urbanization among others. Kenya's towns' are experiencing population growth, urban expansion and an increase in informal settlements (Yamano, Place, Nyangena, Wanjiku &

Outsnka, 2009). Urbanization, rapid population growth and conversion of farmlands to non-agricultural uses have not only led to the decline in mean farm size, but also made traditional farming practices in peri-urban areas unviable ((Jayne, Mason, Myers, Ferris, Mather, Beaver, Lenski, Chapoto and Boughton, 2003); Stambuli, 2002; Yamano *et al.* 2009).

In Kenya, farming accounts for about 26% of Kenya's Gross Domestic Product (GDP) with an estimated 75% of the population depending on farming either directly or indirectly (Foeken & Owuor, 2006). Agricultural sector employs approximately 4.5 million people countrywide directly in production, processing, and marketing, while another 3.5 million people benefit indirectly through trade and other activities. Up to 80% of this population lives in the rural and peri-urban areas. The agricultural sector is a major source of livelihood to smallholder farmers and has been identified as a key "driver" towards the realization of the "Vision 2030", which envisages Kenya as middle income earner economy and a semi-industrialized country by the year 2030 (National Vision Steering Committee, 2006).

Although mean farm size has reduced generally throughout Kenyan peri-urban areas, farm size reductions in Nakuru East Sub-County is higher due to Nakuru being one of the fastest growing towns in East Africa (United Nation Habitat [UNHABITAT], 2010). Lanet Division is a peri-urban area in Nakuru East having farming as one of its major source of livelihood (Ministry of Agriculture [MoA], 2012). The close proximity of Lanet Division to Nakuru Town has seen an increased conversion of agricultural land into non-agricultural activities. The division is also one of the most populated in Nakuru County, with a population density of about 1,862 people per km² as compared to the county population density of 66 people per km² (Kenya National Bureau of Statistics, 2009). The increased demand for land, for property development, institutional development, establishment of industrial parks and hospitality industry among others have led smallholder farmers to review their livelihood strategy choices. However, it is not clear as to what informs the smallholder farmers' choice of livelihood strategy.

Diversification of income sources and bundling activities into livelihood strategies is a natural response in risky environments. Adoption of a livelihood strategy choices depends on available assets and conditions faced (Ellis & Bahiigwa, 2003). It is on this basis that this study examined factors influencing choice of livelihood strategy among peri-urban smallholder farmers in Lanet Division of Nakuru County. Specifically, the study focused on

how farmers' social status, market accessibility, land size, credit accessibility and social status influence farmers' choice of livelihood strategies.

1.2 Statement of the Problem

Farming is practiced on about 15% of Kenya's agricultural land. It is one of the main drivers of the economy and also accounts for over 70% of employment opportunities in the country. Over the year's agricultural activities have been faced with disruptive factors such as rising urbanization and rapid population growth among others. These have resulted in reduced agricultural land sizes. Lanet Division of Nakuru County has farming as one of its major source of livelihood despite being one of the most populated Division in Nakuru County, with a population density of about 1,862 people per km² as compared to the County population density of 66 people per km². Increased demand for land for property development, institution development, establishment of industrial parks and hospitality industry has resulted in reduction in farm size per farmer, with farmers owning less than an acre. Despite these, farming continues to persist as a source of livelihood, a pointer to the ability of the smallholder farmers to adapt to the emerging obstacles. However, it remains unclear as to what influences the choices of these strategies. It was on this basis that this study examined selected factors influencing choice of livelihood strategy among peri-urban small holder farmers in Lanet Division of Nakuru County, with specific focus on farmers' market accessibility land size, credit accessibility and social status.

1.3 Purpose of the Study

The purpose of this study was to examine the influence of selected factors on choice of livelihood strategy among peri-urban smallholder farmers in Lanet Division of Nakuru East Sub-County, Kenya.

1.4 Objectives of the Study

The objectives of the study were to:

1. Establish the influence of market accessibility on peri-urban smallholder farmers' livelihood choices strategy in Lanet Division of Nakuru East Sub-County, Kenya.
2. Establish the influence of land size on peri-urban smallholder farmers' livelihood choices strategy in Lanet Division of Nakuru East Sub-county, Kenya.
3. Establish the influence of credit accessibility on peri-urban smallholder farmers' livelihood choices strategy in Lanet Division of Nakuru East Sub-county, Kenya.

4. Establish the influence of social status on peri-urban smallholder farmers' choice of livelihood choices strategy in Lanet Division, Nakuru East Sub-County, Kenya.

1.5 Hypotheses of Study

This study tested the following null hypotheses in Lanet Division, Nakuru East Sub-county, Kenya.

Ho1: There is no statistically significant influence of market accessibility on smallholder farmers' livelihood strategy.

Ho2: There is no statistically significant influence of land size on smallholder farmers' livelihood strategy choices.

Ho3: There is no statistically significant influence of credit accessibility on smallholder farmers' livelihood strategy choices.

Ho4: There is no statistically significant influence of social status on smallholder farmers' livelihood strategy choices.

1.6 Significance of the Study

Findings of this study is to inform the farmers on their choice of adopting appropriate livelihood strategy given their market accessibility, land size, credit accessibility and socio status among others. The findings were also to inform county governments, development agents and donors on infrastructure development and capacity building areas to empower the farmers in adopting appropriate livelihood strategies. The ministries of agriculture, Livestock and Fisheries will to use the findings of this study to formulate appropriate polices that would enable the farmers cope with decreased agricultural land sizes in the peri-urban areas. It will also provide useful information for scholars and students of community development, urban development and natural resource management.

1.7 Scope of the Study

The study focused on choice of livelihood strategy adopted by smallholder famers' in their adaptation to reduced land holding in Lanet Division, Nakuru East Sub-County, Kenya. The division was selected because of its proximity to Nakuru town and being a peri-urban area. The division is also experiencing decrease in land size due to its rapid population growth rate. Factors covered in the study were market accessibility, land size, credit accessibility and social status.

1.8 Limitations of the Study

The limitations of the study were:

1. Farmers not having farm records about past farming experience.
2. Some respondents were unfriendly to the researcher. The researcher tried to strike rapport with respondent.

1.9 Assumptions of the Study

In this study it was assumed that:

1. The respondents accurately recalled information concerning their farming.
2. The respondents provided honest responses.

1.10 Definitions of Terms

The following terms are defined in the context of this study

Credit: According to Oxford Advanced Learner's Dictionary (2009), credit refers to amount of money required to start a business. In this study, it refers to amount of money from financial institution to help in running the farming activity until it generates enough money to run itself.

Credit Accessibility: This is the amount of credit to which a borrower has access at a given time (Ogato, Boon & Subramani, 2009). In this study, credit accessibility will refer to the ease of accessing credit by smallholder farmers are able access from financial institutions.

Land Size: is an area of land that is devoted primarily to agricultural activities with primary objectives off producing food and other crops (Kimaru & Jama). In this study land size refers to the amount of land the smallholder farmers own in Lanet Division.

Livelihood Strategies: Livelihood strategies refer to various activities employed by individuals and households to mobilize resources for purposes of meeting basic and other needs (Grown & Sebstad, 2009). In this study livelihood strategies will refer to efforts employed by smallholder farmers to cope with decreased land sizes in Lanet Division, such as zero grazing, poultry keeping, rabbit keeping and other business activities.

Livelihood choices strategy: These are the activity(ies) that people choose to undertake in order to achieve their livelihood goals (Grown & Sebstad, 2009). According to this study it is the best farming activity (ies) a farmer chooses to engage in basing that choice on social status, land size, market accessibility and credit accessibility among others.

Market: According to Oxford Advanced Learner's Dictionary (2009), market refers to a building or an open place where people meet to sell or buy commodities or services. In this study, it refers to smallholder farmers' outlets for selling their farm produces as well as farm inputs.

Market Accessibility: Refers to the ease of reaching a market for the purpose of performing trading activities (Shaun, Patrick & Elly, 2008). In this study, market accessibility will refer to the distance, availability and the sufficiency of the market for the farm products.

Peri-Urban: Douglas, Alam, Maghenda, McDonnell, Mclean & Campbell. (2008) define peri-urban as a transition or interaction of where urban and rural activities are interphased. In this study, it will consider peri-urban areas as the area immediately surrounding a city or a town.

Peri-urban smallholder farmer: Douglas *et al.* (2008) defines it as the farmer who is located at the outskirts of town approximately 5 to 10 km away from town. In this study, this refers to the farmer with limited land availability not more than 2 acres and located at the outskirts of town approximately 5 to 10 km away from town.

Smallholder farmer: Dixon, Tanyeri and Wattenbach (2005) consider a smaller farmer as one usually cultivates less than one hectare of land, which may increase up to 10 hectares or more in sparsely populated semi-arid areas, and keeps a maximum of 10 animals. In this study this refers to the farmers owning pieces of land ranging in size from one to two acres and growing crops, keeping livestock or both.

Social Status: According to Santrock (2011) defines social- status as the grouping of people with similar occupational, educational, and economic characteristics. Woolfork (2007) defines it as the relative standing in society based on income, power, background and prestige. In this study, it is used to denote different classes of people based on gender, age and education.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of related literature pertinent to the study. This section included an overview of peri-urban small holder farming, selected factors influencing livelihood choices strategy and Theoretical frame work. The section concluded by presenting a conceptual framework.

2.2 An Overview of Peri-Urban Smallholder Farming Globally

Peri-urban farming is understood to refer to agricultural activities, which include crop and livestock production, and processing and distribution activities around cities and towns, with the main motivation being personal consumption and/or income generation, and which competes for scarce resources such as land, water, energy and labour around the cities and towns (Gundel 2002). These economic activities are done on a small or large scale basis depending on the availability of land and other inputs as well as market (Urban Harvest 2005). Economic activities that are often carried out by peri-urban farmers include livestock keeping, fodder and milk production, aquaculture, bee keeping, poultry keeping and forestry (Urban Harvest).

Although recent statistics on peri-urban farming are lacking, the United Nations Development Program (UNDP) estimated in 1996 that about 800 million people were engaged in urban agriculture worldwide. Of these, 200 million were considered to be market producers employing about 150 million people on full-time basis, (UNDP, 1996). Peri-Urban farming contributed about 25% of world food production in 1993, which was expected to grow to 35% by 2005 and a further 45% by 2015 (Stambuli, 2000). Studies in Africa's major urban centers showed that Peri-urban farmers provided over 60% of food consumed by city and town residents. For instance, peri-urban farmers around Dakar meet over 60% and 70% of the city's vegetable and poultry demands (Moustier & Mbaye, 2000). Similarly, peri-urban farming around Kampala and Accra produced some 70% and 80% of the poultry and vegetables consumed in the two cities respectively (Obunde, Mbogo, Kosura & Kimani, 2004). Therefore, peri-urban farming does not only help in increasing the diversity of foods consumed in major urban areas but is also an important source of nutritional diversity. Studies by Maxwell (2003), have indeed confirmed that urban and peri-urban farming is positively associated with both food security and economic security.

Dixon *et al.*, (2005) considered a smallholder farmer as one who usually cultivates less than one hectare of land, which may increase up to 10 ha or more in sparsely populated semi-arid areas, and keeps a maximum of 10 animals. In Kenya, Lanet Division is a densely populated area, which implies that most of smallholder farmers would actually be cultivating less than five acres (2 hectares). Dixon *et al.*, (2005) observed further that smallholder farmers accounts for over 75 percent of the total agricultural outputs in Kenya, Uganda, Tanzania and Ethiopia. They argued that these farmers cultivated an average farm size of about 2.5ha. While high population growth and scarcity of arable land has given rise to the rapid growth of smallholder farming, inequitable land distribution remains the main cause of smallholder farming as the following discussions reveal. While looking at distribution of arable land in East and Southern Africa (Jayne *et al.*, 2010), reported that highest per capita land quartile in East and Southern Africa control 5 to 15 times more lands than households in the lowest quartile. In Kenya, for example, mean farm sizes for the top and bottom land quartiles were 6.69 and 0.58 hectares respectively (Dixon, 2005).

Despite limited access to farmland, smallholder farming had as early as 1960s been shown to have a significant contribution to poverty reduction (Mellor, 2014). Bahram and Chitemi (2006); and Anríquez and Stamoulis (2007), further observed that the expansion of smallholder farming can lead to a faster rate of poverty alleviation, by raising the incomes of smallholder farmers and reducing food expenditure, and thus reduces income inequality. A World Bank study also reported that a rise in average smallholder farmers' household income of 2% leads to a fall in the poverty rates by about 4 percent on average (World Bank, 2008). This led the World Bank to conclude that GDP growth originating in smallholder agriculture was about four times more effective in reducing poverty than GDP growth of other sectors (World Bank, 2008).

It was apparent from available literature that peri-urban smallholder farming was rapidly growing in large part due to high population growth, increased urbanization as well as inequitable distribution of farmlands in Africa, more so in Sub-Saharan region. In Kenya peri-urban farming is fast growing due to pressure on peri-urban land. This due to high population growth and rural urban migration leading to increased urbanization. Nakuru East sub-county is a peri-urban area facing land pressure arising from high population and expansion rate of Nakuru Town. However, scant literature exists on how peri-urban farmers in this area are coping with decreased farming land size and factors influencing their livelihood strategies.

2.3 Factors Influencing Choices of Livelihood Strategy

Farming as a primary source of income has failed to guarantee sufficient livelihood for most farming households in sub-Saharan African countries (Babatunde, 2013). This is because the agricultural sector in the sub-Saharan African countries is highly characterized by decreasing farm sizes, low levels of output per farm, and a high degree of subsistence farming (Jirstrom, Anderson & Djurfeldt, 2011). When farmers lack assets, they can be proscribed from participating in activities that might improve their well-being. While evidence shows that returns from one additional year of schooling are quantitatively and statistically significant in rural areas of Latin America (Tegegne, *et al.* 2002). Lack of education may slow diversification and contribute to poverty.

Decisions about a livelihood strategy depend on household assets. Assets are stocks of productive factors that produce a stream of cash or in kind returns and they have significant importance at the moment of choosing a livelihood strategy. For example, in Mexico the asset position of rural households has a significant effect on household participation in income-generating activities and returns to those activities. Increasing schooling of the household head discourages participation in staple production, while encouraging participation in wage work and international migration (Taylor & Yunez, 2000).

Household assets can be expanded by investment, and this expansion can influence household decisions in future livelihood strategies. Asset value depends on ownership status and transferability (De Janvry & Sadoulet, 2000). For example, land is often a clear and transferable asset (Winters, Davis & Corral, 2002). In certain areas of Ecuador, however, land is not clear or transferable due to lack of markets and property rights (Samaniego, 2006). On the other hand, human capital is clearly owned by the household but not transferable. The lack of transferable assets could inhibit selection or continuance of certain livelihood strategies. For example, households that own extensive amounts of land might engage in agricultural production, but if they have the option to transfer land and access financial capital they might diversify their strategy. In Kenya situation however, land is highly transferable and as such, there is an increased choices strategy as far as livelihood strategies are concerned. Therefore, the study seeks to establish factors influencing livelihood choices strategy among small peri-urban farmers in Lanet Division in Nakuru County.

Thus, in any debate on farming, gender requires special treatment, and any set of strategies for sustainable food security must address women's access to productive resources. In Africa,

the predominance of patriarchal systems relegates women positions, ensuring that women only have access to minimum farm acreage (Ambler, Lauren, Anna, and Ruth, 2007). One of the most serious obstacles to increasing the agricultural productivity and income of rural women is their insecurity of land tenure. Security of tenure is the key to having control over major decisions, such as what crop to grow, what techniques to use, what to consume and what to sell (Obunde, Mbogo, Kosura & Kamoni, 2004). A comprehensive analysis of case studies from five South Asian countries showed that fewer women than men have command over the use of arable land, women have more limited land use rights, and many women have no control at all over production and management decisions (Agarwal, 2002).

The challenges facing women farmers in Africa are equally daunting. Women's rights to land and property are very limited and often depend on their marital status. Gender influences an individual's behavior, attitude, status, interaction and involvement in the decision making processes. In the African context, gender ascribes certain roles that are instituted by society and sanctioned by customs. Closely linked to gender especially in the African context was marriage. It was by marriage that membership was increased through childbearing. It was assumed generally that marriage comes with added responsibilities to an individual as a wife /husband, mother /father and in-laws since he has to provide basic needs to his family and maintain the extended relationship. Those who take care of their families are accorded respect and status in society. The actions of the married in most cases are guided by introspection, weighing options and the fear of the adverse consequences.

Another important social variable that has been found to influence the adoption of agricultural practices is the age of the farmer. Guthrie's (2001) suggested that for technologies requiring long-term investment, age may also indicate the time horizon of the farmer, with younger farmers having a longer frame in which to gain the benefits. It would be interesting to gauge this in the context of the proposed study. It was indeed undeniable fact that some livelihood choices in the agricultural sector are characterized by investments that require for their rewards to be realized. But it also be noted here that most of Kenyan youth often shun farm-based activities and instead prefer formal employment, leaving the majority of those deriving their livelihoods from agricultural activities as being the middle aged and the elderly. It would therefore be important to subject Guthrie's (2001) findings to the Kenyan situation especially in Lanet Division.

Kakwani (2005) contributions on the link between individual's social status and livelihood choices has highlighted on the implications of poverty on the adoption of farming activities. Kakwani argued that any agricultural technology has to be sensitive and be pro-poor, with its being substantially relative to its cost (including the adoption risks it involves). Implied here was that farm technology has to be affordable if it was to be positively received by the farmers. It is a well-known fact in Kenya that many people especially rural-based population suffer from extreme poverty. Currently, over 60% of the Kenyan population is estimated to be below the poverty line, with the majority of the poor residing in rural areas, where agriculture is the main source of livelihood (KNBS, 2009). Poverty as a social characteristic limits people's access to vital information and services, which further influences their choices of livelihood opportunities not only in the agricultural sectors but also in other productive sectors of life.

2.3.1 Market Access and Farmers' Choices of Livelihood Strategy

The strategies discussed in the previous section as adopted by the smallholder farmers from various parts of the world are largely aimed at maximizing production and conserving soil fertility. The following discussion focused on the strategies of smallholder farmers in their effort to secure market for their farm produce. While analyzing peri-urban livelihoods in West Africa Gregory (2005) found that farming was the most significant livelihood activity for a large proportion of people in peri-urban villages around both Hubli-Dharwad and Kumasi. The findings of Gregory confirmed that farming was still a major source of livelihood despite the changing land use patterns in the peri-urban areas. Other studies have reported livestock keeping another important source of livelihood in peri-urban areas. Livestock keeping especially through zero-grazing was found by Gundel (2002) to be an important livelihood strategy in peri-urban areas in East Africa. For instance, a study conducted in the peri-urban areas of city of Kisumu, Western Kenya reported 14 different livestock species kept in urban and peri-urban areas (Onim, 2002). In Ethiopia the livestock numbers encountered in major urban and peri-urban areas in 2001 were astonishingly large and an undeniable testimony of their relevance (Tegegne *et al.*, 2002). Similar situations were reported from Kampala, Dar es Salaam and Nairobi (Ishagi, Ossiya, Aliguma, & Aisu, 2002); (Ishani, Gathuru, & Lamba, 2002).

Contract farming was one of the strategies used by smallholder farmers to secure reliable markets for their produce. In Kampala and Dar es Salaam for instance, the linkage of producers to big outlets such as supermarkets and chain stores through contractual

arrangements has enabled peri-urban smallholder farmers to maintain their incomes and sustenance (Crush & Frayne 2011). It was clear here that contract farming and collective action can help incorporate smallholder farmers in high-value supply chains that require specialized inputs and sell to markets for specialized outputs. If well-utilized, stronger linkages of smallholder farmers with supermarket chains are likely to improve marketability and profitability of their products. What was not clear here was whether farmers deliberately adopted livelihood choices whose markets already exist. Further, it would be significant to understand other market outlets other than the supermarkets highlighted here that farmers used to channel their produce.

Another farm household characteristic that influenced smallholder farmers' livelihood strategies was the proximity to markets and urban centers, which was seen in the context of distances from the farms to the markets (Rebecca & Collin, 2008). Households located nearer to factor markets are expected to have higher farm productivity than those located in remote areas. Proximity to good roads increases access to affinity to engaging in horticultural farming, in which the perishable nature of its products to be disposed of in a timely manner. Lanet Division is fairly close to major urban settlements including Nakuru town, Gilgil and even Naivasha town. What remains unclear is whether farmers in the division have fully exploited the market opportunities given their close proximity to major urban areas. It would be important to establish whether consumption trends of farm produce have in any had a significant bearing on the livelihood choices made by farmers in the division.

Contract farming between smallholder farmers and supermarkets is not limited to the local supermarkets only as the following discussions reveal. For example, evidence from Madagascar suggests lessons on how smallholder farmers can benefit from the emerging retail networks. In Madagascar, small-scale farmers that produce vegetables for supermarkets in Europe received assistance and supervision through contract mechanisms, which help them meet the complex quality standards of the European markets (Minten, Randrianarison and Swinnen 2009). This has led to a steady growth of the number of farmers of vegetables for exports to Europe notwithstanding the major disadvantages of geography, bad local infrastructure, low rural education levels, and high compliance and transaction costs.

2.3.2 Land Size and Farmers' Choices of Livelihood Strategy

The need by farmers to respond to reduced land holding in ways that maximize production was well captured by Boserup (1965) who maintained that as population density increases,

land becomes scarce and farms grow smaller. The author argues that farmers must shorten fallow periods, and increase investments in productive technologies if they are to avoid the hardships of migration and/or a declining standard of living. Although Boserup used length of fallow as the key variable in defining the degree of intensification, the author nonetheless underscores the need for farmers to approach farming as a source of livelihood from a more innovative standpoint. This in itself suggests that land size is a critical consideration in the choice of livelihood strategies adopted in the farm.

Land size has also been a determinant on the demand and competition for land and related resources. While examining farming activities in the peri-urban areas, Owusu (2008), observed that smallholder farmers in the peri-urban areas are faced with the challenge of intense competition for land. Owusu observes that alongside the poor city migrants, middle income earners and wealthier people also tend to move out to exploit natural resources such as land based in the peri-urban areas. The author argues that among other resources, middle income dwellers acquire land for construction of own houses and for establishment of commercial activities to supplement incomes obtained from urban areas. In addition to urban migrants, peri-urban areas have also been a preferred destination for rural migrants, who prefer to reside in peri-urban areas and small towns either as their final destinations or temporary stop before finally settling in inner cities (Owusu, 2008). The ever-increasing demand for land in the peri-urban areas means that the little land available for farming activities has to be maximized. To achieve this, farmers have to innovatively identify those livelihood strategies that ensure maximum production. The proposed study indeed attempted to establish how the various sizes of farms have influenced the kind of livelihood choices being carried on the farms.

The amount of land owned by a smallholder has been cited as one of the considerations that account for the choice of livelihood strategies. The area of land owned by the household has a significant negative correlation with the likelihood of choosing respectively. This suggests that rural households with more land tend to follow agricultural extensification rather than diversifying. This implies that the probability of diversifying to off farm and nonfarm activities decreases. The availability of extension services according to (Lanjouw, Shariff, and Rahut, 2007) also influenced the kind of farm-based livelihood strategies adopted by smallholder farmers. Keeping other factors constant, the possibility of choosing farm-based sources of livelihood that require constant extension services such as dairy keeping decreases by about 17% with uncertainty of reliable extension services.

Mbibia and Huchzermeyer (2000) described several changes in investment and land use which have occurred in Tanzania as a result of decreased land size. These included complex networks of irrigation channels and terracing of steep slopes. Irrigation as a strategy was used to ensure there was continuous crop production throughout the year. This was one way of maximizing production from relatively small farms. The extensive use of terraces on steep slopes was also a way of bringing such areas under production. Steep slopes are increasingly being cultivated due to the scarcity of available farmlands. But terracing is extensively employed to reduce run-off and maintain soil structure and fertility thereby enhancing crop yields.

Riddell and Campbell (1986) provided further evidence from their work in the Mandara Mountain region of Cameroon. In this region, high population densities and small land sizes have made the development of intensive farming systems a necessity. Over time, farmers have developed a complex farming system based on soil-building strategies, integration of animal husbandry with cultivation, and soil conservation. Farmers also intensified agricultural production through multiple cropping, increasing the number of cropping cycles per year. Boserup (1987) described multiple cropping as a strategy to increase yields in the face of declining land holdings. Moreover, increasing the number of cropping cycles per year also helps in maximization of production over the small pieces of land available.

While multiple cropping may result in loss of soil fertility and possible spread of crop pests and diseases, farmers have adopted the growing crop tubers as a way of reducing adverse effects of multiple cropping. For instance, Clay and Magnani (1987) have reported that households with insufficient land have to plant ever-increasing proportions of their holdings with sweet potatoes and other tubers. These tubers, the authors observed have a higher caloric value than do other crops. They also grow relatively well in poorer soils such as those found on steeper slopes or those that have been under continuous cropping (Gleave & White 1969). Lewis (1985), similarly found that smallholder farmers especially those cultivating the steep slope areas, have adopted the growth of woodlots and pastures to only raise wood fuel for domestic and commercial use, and pasture for livestock but also to control soil erosion.

2.3.3 Credit Access and Farmers' Choices of Livelihood Strategy

Kakwani (2005) asserts that poverty has serious implications on the adoption of farming technology. The author argued that any agricultural technology has to be sensitive and be pro-poor, with its being substantially relative to its cost (including the adoption risks it

involves). Implied here was that farm technology has to be affordable if it is to be positively received by the farmers. It is a well-known fact in Kenya that many people especially rural-based population suffer from extreme poverty. Currently, over 60% of the Kenyan population is estimated to be below the poverty line, with the majority of the poor residing in rural areas, where agriculture is the main source of livelihood. Lack of progress in poverty reduction is partly due to inadequate implementation of previous anti-poverty measures and partly because the measures paid insufficient attention to the development of agriculture, the backbone of the Kenyan economy (KNBS, 2009). Implied here is that 60% of Kenyans cannot meaningfully participate in farming activities unless they are financially facilitated. One way of increasing farmers' participation in farming is through the provision credit.

Samuel (2003) argued that the availability and the ease which farmers can access credit usually influences the choice of livelihood strategies of smallholder farmers especially those that require greater intensification. Accordingly, Credit use allows smallholder farmers to follow agricultural intensification by accessing farm inputs, which in turn improves productivity. Fear of poor yields due to lack of appropriate inputs such as fertilizer, disease and pest control may to a large extent discourage farm-based livelihoods that require heavy application of fertilizer, pesticides and even herbicides.

The significance of credit to farmers has also been echoed by Kitha and Lyth (2011) who observe that lack of credit was one of the principal factors in the smallholder farmers' low productivity. However, the problem was further complicated in recent years by the volatile food and energy prices and very recently by the global financial crisis (Kitha & Lyth, 2011). Evidence from East African Countries-Kenya, Uganda, Ethiopia and Tanzania- showed that smallholder farmers in these countries depend on savings from their low incomes, which limits opportunities for expansion. For example, a survey of a sample of 344 smallholder farmers in Tanzania in 2001 showed that over 50% of smallholder farmers came from farming, 46.6 per cent from nonfarm employment (wages and self-employment) and less than 4 percent from remittances. Because of the lack of collateral and/or credit history, most smallholder farmers are bypassed not only by commercial and national development banks, but also by formal micro-credit institutions. In addition to own sources, farmers thus rely on incomes of friends and relatives, remittances, and informal money lenders to enhance their farming activities.

Farmers' inability to access credit stems from the unreliable land tenure system. Land tenure system has also been found to influence access to credit, which further influences adoption of some farm practices especially those that are capital intensive (Diagne & Zeller, 2001). Ownership of land is often thought to be a prerequisite for obtaining credit. For example, in Ethiopia, farmers must have at least 0.5 ha under maize in order to participate in the credit scheme for maize. In Kenya, the Seasonal Credit Scheme requires that farmers have at least 5 acres of land. Thus, farmers with smaller amounts of land will not have access to formal credit through these channels. It was important also to observe that financial institutions sometimes insist on land documents such as title deeds before advancing loans to applicants. In this case land was used as collateral implying therefore tenure systems that do not confer ownership to individuals such as leasing cannot be used to access credits. Credit is important since it enables farmers to use the funds to invest in farm practices. Farmers with limited finance cannot effectively practice farming practices such as commercial agriculture and highly mechanized ones. This therefore makes land tenure system an important consideration in the proposed study.

2.3.4 Social Status and Choices of Livelihood Strategy

Scholars such as Wall, Pettibane and Kesley, (2005) argued that people's social status can enhance or undermine them not only in their choice of livelihood opportunities but also their access to the decision-making process in the community affairs. Although these scholars have not stated specific social status that influenced individuals' livelihood choices, the proposed study indeed concurs that individuals' social status may determine the outcome of community involvement in local development, including those relating to farming. Education is one of the social statuses that may significantly influence individuals' livelihood choices. Education has always played a crucial role in the society as it disseminates knowledge, provides necessary skills, and helps in forming attitudes (Haque, 2009). Farmers' adoption of specific livelihood choices may thus be influenced by their level of education. The fact that education aids the formation of certain attitudes implies farmers' level of education will influence the formation of certain attitudes toward certain farming practices. Therefore, it is expected that farmers are likely to adopt those livelihood choices that they perceive positively and object to those that they view negatively. It is clear here that education as a social status may influence farmers' livelihood choices through the formation of attitudes that either leads to the adoption or rejection of particular livelihood strategies.

While land and water are critical assets in rural areas, education is often the most valuable asset for rural people to pursue opportunities in the new agriculture, obtain skilled jobs, start businesses in the rural nonfarm economy, and migrate successfully (Doss, 2003). Yet education levels in rural areas tend to be dismally low worldwide: an average of four years for rural adult males and less than three years for rural adult females in Sub-Saharan Africa, South Asia, and the Middle East and North Africa. Improving basic rural education has been slower than in urban areas. It is also expected that farmers with higher levels of education will be more likely to use improved technologies. Doss (2003), found that, in Ethiopia, household-level education affects whether a farmer was an early or late adopter of agricultural technology, but was less important in determining whether or not the farmer ever uses fertilizer. The implication of these findings are that livelihood choices strategies that are capital intensive are likely to be adopted by farmers who are highly educated, while those that are labour intensive by the lowly educated farmers. It will be important to investigate this in the context of the proposed study.

Gender remains yet another social factor that influences several aspects of agricultural activities in the community including those relating livelihood choices strategies. Gender determines who own land among most of the African communities. Land in many African communities is owned by men. Yet women are important participants in agricultural activities, with most of the smallholder farmers being women. Women are recognized as playing a pivotal role.

2.4 Theoretical Framework

The study is anchored on Rational Choice Theory (Coleman, 1990). Rational Choice theory was used to explain why persons as individuals or groups choose to adopt certain livelihood strategies given a range of livelihood opportunities. Rational Choice Theory is an approach used by social scientists to understand human behavior. The approach has long been the dominant paradigm in economics, but in recent decades it has become more widely used in other disciplines such as Sociology, Political Science, Anthropology, Public Policy and even Community Development Studies.

2.4.1 Rational Choice Theory

In community development, rational choice theory is based on the fundamental tenets, which holds that people freely choose their behavior and is motivated by the avoidance of failure and the pursuit of livelihood opportunities that addresses their felt needs. The theory posits

that people evaluate their choice of actions in accordance with each option's ability to produce the maximum benefits.

Rational Choice Theory generally begins with consideration of the choice behavior of one or more individual decision-making units which in basic economics are most often consumers and/or firms (Coleman, 1990). The rational choice theorist often presumes that the individual decision-making unit in question is “typical” or “representative” of some larger group such as buyers or sellers in a particular market. Once individual behavior is established, the analysis generally moves on to examine how individual choices interact to produce outcomes.

This theory posits that the choices made by buyers and sellers are the choices that best help them achieve their objectives, given all relevant factors that are beyond their control (Coleman, 1990). The basic idea behind rational choice theory is that people do their best under prevailing circumstances (Coleman, 1993). For instance, the consumer will choose the most preferred alternative. If the consumer is indifferent between two or more alternatives that are preferred to all others, he or she will choose one of those alternatives.

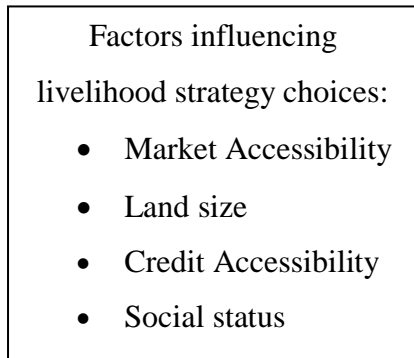
In this study, smallholder farmers in Lanet Division have several choices of livelihood strategies through which they can pursue in their farming activities. These may serve as the alternatives, but the choices they make must reflect their interest, capacity as well as commitment/desire in the farming activities. People have different interest and their pursuit of certain issues may be dictated as to whether or not their interests will be best served. For instance, choices of livelihood strategies adopted by farmers may be determined by their social status-level of education, gender and marital status. Further, farmers’ choices of livelihood strategies may be brought about by their belief that the size of land available at their disposal can support certain farming activities and not others. Similarly, the choices of livelihood strategies adopted by farmers must also be dictated by access to markets and credit.

2.5 Conceptual Framework

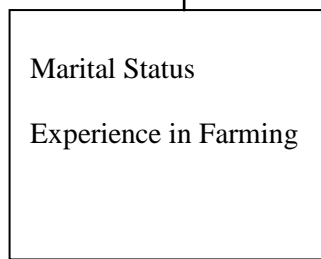
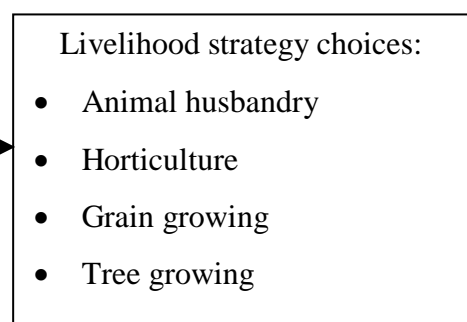
As indicated in Figure 1, the independent variable is selected factors influencing livelihood strategy choices. The selected factors are market accessibility, land sizes, credit accessibility and social status. These factors are envisaged to influence the smallholder peri-urban farmers’ livelihood strategy choices. The dependent variable is the farmer’s livelihood strategies choices. These are depicted by various livelihood strategies; animal husbandry, horticulture and non-farm enterprise. Moderating variable include infrastructure, government

policies and social influence. These are envisaged to have the potential to influence on the independent over dependent variables.

Independent Variables



Dependent Variable



Moderating Variables

Figure 2.1. Influence of Selected Factors on Choices of Livelihood Strategy among Peri-urban Smallholder farmers.

Moderating factors included marital status and Experience in farming. These moderating factors were tested using descriptive statistics in the profile of the respondents. Marital status was established whether the respondents were married, widowed or single. For married couple, either of the partners was in formal employment leaving the partner to make decision on choices of livelihood. Likewise, experience in farming could moderate the independent variable and dependent variable. The number of years one has been in farming is likely to determine the choices of livelihood strategy.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the research design, location of the study and the population that will be considered. In addition, the chapter highlights how the respondents were selected, the instruments that were used to collect data and concluded by an explanation of how the data was analyzed. A work plan and a budget concluded the chapter.

3.2 Research Design

The term research design refers to the way the research was conducted and the procedures used to either test a research hypothesis or answer research questions (Ngau, 2004). The study used *ex-post facto* research design. Kothari (2008) observed that *ex-post facto* research design is applied in those studies whereby the independent variable has already established itself. Consequently, the researcher has no direct control of the variables and thus cannot manipulate them so as to determine whether they have any influence on the dependent variable. Therefore, variables are studied in retrospect in search of possible relationships and effects (Kerlinger, 1973). *Ex post facto* design was suitable for this study because it seeks to investigate any existing relationship between the independent and dependent relationship on selected factors influencing livelihood choices strategy among peri-urban smallholder farmers in Lanet Division.

3.3 Study Location

Lanet Division in Nakuru Sub-County was the site of the study. The division is composed of two locations, namely Lanet and Free Area. It covers an area of 36.7 kilometer square bordering Gilgil Division to the south, Ndundori Division to the west, Barut Division to the North West, and Bahati Division to the east as shown in appendix B. The division is surrounded by the major urban area of Nakuru town. Livestock keeping including dairy farming, sheep, and pig keeping are extensively practiced in Lanet Division. Other economic activities practiced in the division include poultry, rabbit and fish farming and bee keeping. Crop farming as an economic activity is done at small and large scale levels in the division. Small scale farming is largely in an average land area of 2 acres; with large scale ones on 25 acres (Nakuru District Strategic Plan [NDSP], 2005-2012).

3.4 Population of the Study

During the 2009 National census, Lanet Division had a population of 68,321 comprising of 34,098 males and 34,223 females aged over 18 years (Kenya National Bureau of Statistics, 2009). The Division has a growth rate of about 2.5%. After projections, the population was estimated at 79,321 by the time of data collection in July-August, 2015. According to NDSP (2008 - 2012), 57.9% of the households in this division are headed by males while the remaining 42.1% are headed by females. Further, NDSP shows that a majority of the people comprising of 52.6% are aged between 37 years and 55 years. In addition, NDSP shows that 63.2% of the residents in this division have gone up to secondary level of education. The target population included 19,097 households in Lanet division. Lanet division has a total of 2,410 smallholder farmers (MoA, 2012). Therefore, the accessible population for the study comprised of the 2,410 smallholder farmers' heads in Lanet Division. This division comprises of two locations with their respective populations and smallholder farmers as indicated in Table 3.1.

Table 3.1

Population Distribution in Lanet Division

Location	Population	Households	Smallholder farmers
Lanet	19,276	4,649	965
Free Area	49,049	14,448	1,445
Total	68,321	19,097	2,410

Source: National Bureau of Statistics (2009), Page 158.

3.5 Sampling Procedure and Sample Size

A sample size was proportionately allocated for each location from the sampling frame of 2,410 smallholder farmers (MoA, 2012). The Division does not have a complete accurate list of farmers to facilitate simple random sampling. Thus, convenient random sampling was used with the help of the agriculture officer to access the farmers from each location as indicated in Table 3.2. The study focused on household heads as the unit of study since they are the decision makers. Mathematical formula by Nassiuma (2000) was used to determine the sample size as follows:

$$n = \frac{NC^2}{C^2 + (N-1) e^2}$$

N – The population size

n – Sample size

C- The coefficient of variation – 0.6.

For this study, the coefficient of variation was set at 60% because this is the most commonly used, (Nassiuma, 2000).

e – The margin of error (0.05)

N = 2,410

$$\begin{aligned} n &= \frac{2,410 \times 0.6^2}{0.6^2 + (2,410 - 1) 0.05^2} \\ &= \frac{867.6}{6.385} \\ &= 137. \end{aligned}$$

Thus, 137 was sample size for the study. It was proportionally distributed in the two locations as per sub-locations as indicated in Table 3.2.

Table 3.2

Distribution of Sample Size

Sub - Location	Smallholder farmers	Proportionate	Sample Size
Lanet location			
Muguga	343	0.14	19
Mwariki	622	0.26	35
Free Area Location			
Free Area	507	0.21	29
Kiratina	424	0.18	25
Menengai	514	0.21	29
Total	2,410	1.000	137

3.6 Instrumentation

Primary data was collected using a questionnaire which was personally administered to the respondents by the researcher. The questionnaire was based on the four objectives of this study. The questionnaire was preferred due to its suitability for the study as suggested by Mugenda and Mugenda (1999) who observed that questionnaire is commonly used to obtain important information about a population. Questionnaire was also suitable since there was minimal interaction between the researcher and the respondent thereby enhancing respondent

anonymity, reduce biasness, encouraged truthfulness and gave the respondents adequate time to think through the questions which is not usual with the interviews as shown in appendix A. The questionnaire had two sections; A and B. Section A elicited personal data, Section B elicited data on opinions on factors influencing choices of livelihood strategy.

3.6.1 Validity of Instrument

Content validity refers to the degree to which an instrument accurately reflects or assesses the specific concept that the researcher is attempting to measure (Mugenda & Mugenda., 2003). To validate the instrument in this study, items in the questionnaire were developed in line with objectives outlined in chapter one. In addition, the items were piloted in Barut Division and also given to two experts in the Department of Applied Community Development Studies, Egerton University for validation purpose. Based on the results from the pilot study and opinion of experts, changes deemed necessary were effected in the instrument before the main study was executed.

3.6.2 Reliability of Instrument

Reliability of instrument is the degree to which it gives constant results when used more than once to gather data from the same population (Orodho, 2004). The greater the degree of consistency of an instrument, the greater is its reliability.

The researcher piloted the instrument for reliability in Barut Division. Barut Division was chosen because it has similar peri-urban settlement as Lanet Division. A list of smallholder farmers was obtained from Barut Division Agricultural Office. According to Mugenda and Mugenda (2003), a piloted sample size of 1% to 15% of the sample to be studied is recommendable. However, this study considered 30 smallholder farmers for pilot study who were randomly selected and questionnaire administered too. Data obtained from piloting was analyzed using Statistical Package for Social Sciences (SPSS v21). The instrument was accepted since the Cronbach Alpha Reliability Coefficient attained was 0.7725 at $\alpha=0.05$. This was above the threshold of 0.7 which is considered suitable for predictions to be sufficiently accurate according to Frankell and Wallen (2000) and Mugenda and Mugenda (2003).

3.7 Data Collection Procedure

An introductory letter was obtained from Egerton University's Graduate School to facilitate the acquisition of a research permit from the National Commission for Science, Technology Innovation (NACOSTI) (Appendix C). Prior to data collection, a visit to the study area was

conducted to obtain permission from the local administration. Chief of Lanet and the Sub-Location assistant chiefs were briefed on the study. To make the data collection process efficient, the Lanet Division Agricultural Officer (DAO) was requested to assist in identifying the respondents. Data collection then commenced. This involved making random visits to the various small holder farmers through the direction of the DAO and the farmers themselves and administering the questionnaires to each of the household heads. This was done by visiting them in their homes and others visiting them in their group meetings. The respondents were given time to provide the answers to the questions and then drop the filled questionnaires at the DAOs office. Afterwards, the questionnaires were collected by the researcher for analysis.

3.8 Data Analysis

After administering the research instruments and collection of primary data, it was edited to minimize errors by respondents. Coding was done to translate question into specific categories. The coded items were analyzed with the aid of a SPSS Version 23. Data was analyzed using both descriptive (frequencies, percentages, means and standard deviations) and inferential statistics; Logistic Regression analysis were used. Table 3.3 summarizes data analysis procedures for the study.

Table 2.3:

Summary of Data Analysis

Research hypotheses	Independent variables	Dependent variable	Statistic tests
Ho1: There is no statistically significant influence of market accessibility on smallholder farmer's livelihood strategy choices in Lanet Division, Nakuru East Sub-County.	Market accessibility: <ul style="list-style-type: none">• Distance• Readiness• Affordability to the market	Livelihood strategy choice: <ul style="list-style-type: none">• Animal Husbandry• Horticulture• Grain Growing• Tree Growing	Logistic Regression
Ho2: There is no statistically significant influence of land size on smallholder livelihood strategy choices in Lanet Division Nakuru East Sub- County.	Land size: <ul style="list-style-type: none">• Acres	Livelihood strategy choice: <ul style="list-style-type: none">• Animal Husbandry• Horticulture• Grain Growing• Tree Growing	Logistic Regression
Ho3: There is no statistically influence of credit accessibility on small holder farmer's livelihood strategy choices in Lanet Division, Nakuru East Sub-County.	Credit accessibility <ul style="list-style-type: none">• Access to bank loan	Livelihood strategy choice: <ul style="list-style-type: none">• Animal Husbandry• Horticulture• Grain Growing• Tree Growing	Logistic regression
Ho4: There is no statistically significant influence of social status on small holder farmer's livelihood strategy choices in Lanet Division, Nakuru East Sub-County.	Social factors: <ul style="list-style-type: none">• Age• Gender• Education level	Choices of Livelihood Strategy: <ul style="list-style-type: none">• Animal Husbandry• Horticulture• Grain Growing• Tree Growing	Logistic regression

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This study examined the influence of selected factors on choice of livelihood strategy among peri-urban smallholder farmers in Lanet Division of Nakuru East Sub-County, Kenya. The selected factors were market accessibility, land size, credit accessibility's and social status on livelihood strategy choices among Peri-urban small holder farmers. Data was collected using questionnaires from peri-urban smallholder farmers and analyzed using statistical package for social sciences and interpreted using descriptive (mean, frequencies, percentages and standard deviation) and inferential (simple regression) statistics. The results of this study are presented in this chapter according to the study objectives, which were:

1. Establish the influence of market accessibility on peri-urban smallholder farmers' choices of livelihood strategy in Lanet Division of Nakuru East Sub-County, Kenya.
2. Establish the influence of land size on peri-urban smallholder farmers' choices of livelihood strategy in Lanet Division of Nakuru East Sub-County, Nakuru.
3. Establish the influence of credit accessibility on peri-urban smallholder farmers' choices of livelihood strategy in Lanet Division of Nakuru Sub-County, Kenya.
4. Establish the influence of social-status on peri-urban smallholder farmers' choice of livelihood strategy choice in Lanet Division, Nakuru East Sub-County, Kenya.

4.2 Profile of the Respondents

A total of 137 smallholder farmers filled the questionnaire. Ninety-eight of them correctly filled the questionnaires. The correctly filled questionnaires were those that had been fully filled without leaving blank spaces and those that did not have multiple responses on a statement that required one response. This represented a response rate of 72.1 % which was characterized as simply good. Characteristics in terms of gender, age, experience, level of, marital status and level of education are presented in this section.

4.2.1 Gender of the Respondents

The study sought to establish the distribution of the respondents on their gender. The findings from the analysis were as presented in Table 4.1:

Table 3.1

Response by Gender

	Frequency	Percentage
Male	25	25.5
Female	73	74.5
Total	98	100.0

The study established that the majority of the respondents were female comprising of 74.5%. The males were 25.5 %. The researcher noted that this was not a clear reflection of the area's population distribution where 51.5% of the total population in this area comprises of males and 48.5% comprises of the female gender (Kenya National Bureau of Statistics, 2014).

4.2.2 Age of the Respondents

The researcher further established the distribution of the respondents based on age. The findings from the analysis were as presented in Table 4.2:

Table 4.2

Distribution by Age of Respondents

	Frequency	Percentage
26-35 Yrs	7	7.1
36-45 Yrs	24	24.5
46-55 Yrs	32	32.7
56 Yrs and Above	35	35.7
Total	98	100.0

The Table 4.2: shows that 57.2% of the respondents were between 36 years and 56 years of age. Further, 35.7% of the respondents were above 56 years of age while only 7.1 % of the respondents were between 26-35 years of age. As such the researcher observed that youths in this area did not venture in small holder farming and they have left it to the older generation. The findings from the data collected is supported by Guthire (2001), who noted that most of Kenyan youth often shun farm-based activities and instead prefer formal employment, leaving the middle aged to engage in farming activities.

4.2.3 Respondents Experience

The researcher sought to establish the duration for which the respondents had been in small scale farming. The findings from the analysis were as presented in Table 4.3:

Table 4.3

Experience in Farming

	Frequency	Percentage
Below 5 Yrs	18	18.3
6-10 Yrs	44	44.9
11-15 Yrs	28	28.6
16 Yrs and above	8	8.2
Total	98	100.0

From the table the researcher established that 73.5% of the respondents had been in farming for between six and fifteen years. Eighteen point four percent had been in farming for below 5 years while 8.2 % were in farming for more than 16 years. Thus, most of the farmers had a lot of experience on farming in this area.

4.2.4 Marital Status of the Respondents

The researcher further sought to establish the marital status of the respondents in the area.

The findings from the analysis were as presented in the Table 4.4:

Table 4.4

Marital Status of the Respondents

	Frequency	Percentage
Single	5	5.1
Married	71	72.4
Divorced	1	1.0
Widowed	18	18.4
Separated	3	3.1
Total	98	100.0

The researcher established that the majority of the respondents comprising of 72.4 % were married and 18.4% were widowed. The researcher learnt that either of the partners to most of the married couples was engaged in formal employment therefore leaving the other partner to participate in farming.

4.2.5 Level of Education

The researcher further sought the distribution of the respondents in terms of academic qualification. Education level of an individual can be a major determinant for individuals' participation in various sources of livelihood as shown in Table 4.5.

Table 4.5

Education Level of the Respondents

	Frequency	Percentage
No Formal Education	9	9.2
Primary	13	13.3
Secondary	58	59.2
Tertiary	14	14.3
University	4	4.1
Total	98	100.0

From Table 4.5, the researcher established that 77.6% of the respondents had acquired secondary education and above. As such, the researcher observed that given this academic achievement among the farmers, it was easier for them to adapt new farming methods through learning and attending agricultural workshops. Training through tertiary and university education enables the farmers to employ modern farming techniques in their activities. Education would enable the farmers make informed farming choices regarding the use of technology and the kind of farming to undertake. This is in line with the research conducted by Haque (2009), who concluded that education played a crucial role in the society as it disseminates knowledge, provides necessary skills, and helps in forming attitudes concerning farming.

4.3 Choices of Livelihood Strategy

The study sought to establish the main livelihood strategies the respondents were engaged in. The findings from the analysis were presented in Table 4.6.

Table 4.6

Livelihood Strategies Practiced

	Frequency	Percentage
Zero Grazing	25	25.5
Poultry Keeping	41	41.8
Growing Vegetables	18	18.4
Grains Growing	10	10.2
Bee Keeping	1	1.0
Rabbit Keeping	2	2.0
Tree Growing	1	1.0
Total	98	100.0

The livelihood strategies that smallholder farmers in Lanet Division were involved in included poultry keeping, zero grazing, rabbit keeping, bee keeping, grain growing, flower growing, vegetable growing, and tree growing. However, the following strategies (rabbit 2%, flowers 1%, bees 1%, and tree growing 1%) were chosen by very few either one or two respondents, hence they were excluded from the inferential analysis.

4.4 Market Accessibility and Choices of Livelihood Strategy

The first objective of the study sought to find out whether market accessibility had any influence on choices of livelihood strategy in Lanet Division, Nakuru East Sub-County.

To ascertain the first objective, the following hypothesis was tested.

H₀₁: There is no statistically significant influence of market accessibility on smallholder farmers' choice of livelihood strategy in Lanet Division, Nakuru East Sub- County.

The study sought to determine whether market accessibility had any significant influence on farmers' choice of these strategies. Market accessibility in this study was assessed through three items to which farmers were asked to score on a 5-point Likert scale (strongly disagree, disagree, undecided, agree, strongly agree). These were: whether a ready market for farm produce was available; whether they had to travel long distances to reach market (reversed for analysis); and whether the cost of accessing the market was affordable to them.

Logistic regression analyses were conducted for each livelihood strategy separately and results are presented in Table 4.7. The first analysis was to establish whether market accessibility influenced choice of poultry keeping as a livelihood strategy. Table 4.7 presents results of a logistic regression analysis between choice of poultry keeping as livelihood strategy and market accessibility:

Table 4.7

Results of logistic regression analysis for poultry keeping and market accessibility

	B	S.E.	Wald	Sig.	Exp(B)
Distance to the market(Agree)			0.000	1.000	
Distance to the market (Undecided)	-17.990	19037.593	0.000	0.999	0.000
Distance to the market (Disagree)	-38.710	11915.783	0.000	0.997	0.000
Distance to the market (Strongly Disagree)	-18.872	8861.240	0.000	0.998	0.000
Readiness of the Market (Disagree)			0.000	1.000	
Readiness of the Market (Undecided)	22.546	37670.803	0.000	1.000	6187296507.062
Readiness of the Market (Agree)	-14.757	35126.496	0.000	1.000	0.000
Readiness of the Market (Strongly Agree)	21.392	33040.087	0.000	0.999	1951779123.395
Market affordability (Agree)			0.000	0.997	
Market affordability (Strongly Agree)	56.557	14341.783	0.000	0.997	3650571112753399700 0000000.04
Constant	-3.213	34207.745	0.000	1.000	

Omnibus $\chi^2(7) = 49.339$, $p < 0.001$, $R^2 = 0.422$ (Cox & Snell), 0.563 (Nagelkerke)

A logistic regression analysis shows that there is insignificant influence of market accessibility on the choice to keep poultry ($\chi^2(7) = 49.339$, $p < 0.001$). The model explained 56.3% (Nagelkerke R^2) of the observed variance in choice of keeping poultry as livelihood strategy. The model classified correctly 100% those who did not choose poultry as a livelihood strategy, and 43.2% correctly of those that chose poultry as a

livelihood strategy. Distance to the market, readiness to the market and affordability of accessing the market did not influence the choice of poultry as a livelihood strategy. This was because consumers and brokers of poultry and their products purchase them from the farm gate.

Similarly, market accessibility did not influence significantly the choice of zero grazing as a livelihood strategy as results presented in Table 4.8 shows.

Table 4.8

Results of logistic regression analysis for zero grazing and market accessibility

	B	S.E.	Wald	Sig.	Exp(B)
Distance to the market (Agree)			0.353	0.950	
Distance to the market (Undecided)	-1.758	15685.470	0.000	1.000	0.172
Distance to the market (Disagree)	17.630	9036.155	0.000	0.998	45362272.585
Distance to the market (Strongly Disagree)	18.218	9036.155	0.000	0.998	81652090.653
Readiness of the Market (Disagree)			0.000	1.000	
Readiness of the Market (Undecided)	37.488	33500.589	0.000	0.999	19090236399511152
Readiness of the Market (Agree)	54.430	34340.281	0.000	0.999	4349930099675140x 10 ^{^7}
Readiness of the Market (Strongly Disagree)	1.227	31178.865	0.000	1.000	3.412
Market affordability (Agree)			0.000	0.997	
Market affordability (Strongly Agree)	-53.531	14392.124	0.000	0.997	0.000
Constant	-19.445	32461.880	0.000	1.000	0.000

Omnibus $\chi^2(7) = 21.013$, $p < 0.001$, $R^2 = 0.202$ (Cox & Snell), 0.297 (Nagelkerke)

A logistic regression analysis shows insignificant influence of market accessibility on the choice to keep zero grazing ($\chi^2 (7) = 21.013, p < 0.001$). The model explained 29.7% (Nagelkerke R^2) of the observed variance in choice of zero grazing as livelihood strategy. The model classified 95.7% correctly those who did not choose zero grazing as a livelihood strategy, and 20.8% correctly of those that chose zero grazing as a livelihood strategy. Distance to the market, readiness to the market and affordability of accessing the market did not influence the choice of zero grazing as a livelihood strategy. Just like in the case of poultry keeping, it was observed that consumers and brokers of zero grazing products purchase them from the farm gate.

Likewise, the research sought to establish whether market accessibility influenced choice of vegetable growing as shown in Table 4.9.

Table 4.9

Results of logistic regression analysis for vegetable growing and market accessibility

	B	S.E.	Wald	Sig.	Exp(B)
Distance to the market (Agree)					
Distance to the market (Undecided)	-20.157	15041.688	0.000	0.999	0.000
Distance to the market (Disagree)	0.957	1.537	0.388	0.534	2.603
Distance to the market (Strongly Disagree)	0.416	1.761	0.056	0.813	1.516
Readiness of the Market (Disagree)			0.129	0.988	
Readiness of the Market (Undecided)	22.860	28421.031	0.000	0.999	8469173115.463
Readiness of the Market (Agree)	1.213	32156.139	0.000	1.000	3.363
Readiness of the Market (Strongly Disagree)	0.879	32156.139	0.000	1.000	2.408
Market affordability (Agree)			1.223	0.269	
Market affordability (Strongly Agree)	-0.964	0.871	1.223	0.269	0.381
Constant	-1.046	32156.139	0.000	1.000	0.351

Omnibus $\chi^2(7) = 16.137$, $p < .001$, $R^2 = 0.159$ (Cox & Snell), 0.212 (Nagelkerke)

A logistic regression analysis shows insignificant influence of market accessibility on the choice to vegetable growing as a livelihood strategy. ($\chi^2(7) = 16.137$, $p < 0.001$). The model explained 21.2% (Nagelkerke R^2) of the observed variance in choice of vegetable growing as livelihood strategy. The model classified 31.1% correctly those who did not choose vegetable growing as a livelihood strategy, and 91.7% correctly of those that chose vegetable growing as a livelihood strategy Distance to the market, readiness to the market and affordability of accessing the market did not influence the choice of vegetable growing as a livelihood strategy. Just like in the case of poultry keeping and zero grazing,

Consumers and brokers of vegetables purchase them from the farm gate. Similarly, the research established whether market accessibility influenced choice of grain growing as indicated in Table 4.10.

Table 4.10

Results of logistic regression analysis for Grain Growing and market accessibility

	B	S.E.	Wald	Sig.	Exp(B)
Distance to the market (Agree)					
Distance to the market (Undecided)	90.203	21553.661	0.000	0.997	1.495E+39
Distance to the market (Disagree)	18.157	7589.693	0.000	0.998	76804573.595
Distance to the market (Strongly Disagree)	17.176	7589.694	0.000	0.998	28801715.098
Readiness of the Market (Disagree)			0.000	1.000	
Readiness of the Market (Undecided)	107.877	24632.899	0.000	0.997	7.085E+46
Readiness of the Market (Agree)	124.853	27698.052	0.000	0.996	1.671E+54
Readiness of the Market (Strongly Disagree)	72.334	17080.688	0.000	0.997	2594502644306255 x 10 ¹⁶
Market affordability(Agree)			0.000	0.997	
Market affordability (Strongly Agree)	-53.626	12588.778	0.000	0.997	0.000
Constant	-90.203	21553.661	0.000	0.997	0.000

Omnibus $\chi^2(7) = 32.330$, $p < 0.001$, $R^2 = 0.296$ (Cox & Snell), 0.403 (Nagelkerke)

A logistic regression analysis shows there is no significant influence of market accessibility on choice of grain growing as a livelihood strategy choice.

A logistic regression analysis shows insignificant influence of market accessibility on the choice to vegetable growing ($\chi^2(7) = 32.330$, $p < 0.001$). The model explained 40.3% (Nagelkerke R^2) variance in choice of grain growing as livelihood strategy. The model classified 87.7% correctly those who did not choose grain growing as a livelihood strategy, and 51.4% correctly of those that chose grain growing as a livelihood strategy. Distance to the market, readiness to the market and affordability of accessing the market did not influence the choice of grain growing as a livelihood strategy. It was also noted that consumers and brokers of grain growing products purchase them from the farms.

The analysis of variance yielded was insignificant at $p=0.001$. This reveals that market accessibility is not significant in influencing livelihood strategy. Thus, the null hypothesis that market accessibility had no statistically significant influence on choice of livelihood strategy was accepted.

4.5 Land Size and Choices of Livelihood Strategy

The second objective sought to establish the influence of land size on choices of livelihood strategy in Lanet Division, Nakuru Sub- County.

To ascertain the second objective, the following hypothesis was tested.

Ho2: There is no statistically significant influence of land size on smallholder farmers' choices of livelihood strategy in Lanet Division, Nakuru County.

The study sought to determine whether land size had any significant influence on farmers' choice on poultry keeping, zero grazing, vegetable growing and grain growing as livelihood strategy. Land size in this study was measured through one item to which farmers were asked to score on a 5-point Likert scale (strongly disagree, disagree, undecided, agree, strongly agree). This was whether land size is adequate for farming activities to them.

Table 4.11

Results of logistic regression analysis for livelihood strategy and land size

	B	S.E.	Wald	Sig.	Exp(B)
Land size					
Poultry	-1.316	0.567	5.387	0.020	0.268
Zero grazing	0.591	0.544	1.179	0.278	1.805
Vegetable growing	0.147	0.506	0.084	0.772	1.158
Grain growing	0.874	0.512	2.908	0.088	2.396

Poultry (Omnibus $\chi^2[1]$ 6.056, $p < 0.001$, R^2 0.062[cox & Snell], .083[Nagelkerke])

Zero grazing (Omnibus $\chi^2[1]$ 1.141, $p < 0.001$, R^2 0.012 [cox & Snell], 0.018 [Nagelkerke])

Vegetable growing (Omnibus $\chi^2[1]$ 0.84, $p < 0.001$, R^2 0.001[cox & Snell],0.001 [Nagelkerke])

Grain growing (Omnibus $\chi^2[1]$ 2.930, $p < 0.001$, R^2 0.031 [cox & Snell], 0.42 [Nagelkerke])

A logistic regression analysis shows that there is no significant influence of land size on choice of zero grazing ($X^2 [1] = 1.141$, 1.8% Nagelkerke, vegetable growing($[X^2[1] = 0.84$, 1%

Nagelkerke), and grain growing ($X^2 [1] = 2.930, 4.2\%$ Nagelkerke at $p < 0.001$). However, the analysis shows that there is significant influence of land size on choice of poultry keeping ($X^2 [1] = 6.056, 8.3\%$ Nagelkerke). Farmers who strongly agreed land size was sufficient to keep poultry were 0.268 times less likely to choose poultry as a livelihood strategy compared to those who strongly felt land size was not sufficient for poultry farming.

The model classified 31.3% those who did not choose poultry and 89.1% correctly those that chose poultry. Further, model classified 100% those who did not keep zero grazing. Likewise, the model classified in 100% correctly those who chose vegetable growing. On grain growing, the model classified 84.5 correctly those who did not choose grain growing and 30.6 that chose grain growing.

This indicates that land size insignificantly has influence on zero grazing, vegetable growing and grain growing. But land size had significant influence on poultry keeping. Therefore, the null hypothesis that land size has no significant influence on choice of poultry as livelihood strategy was rejected. The researcher therefore, concluded that land is a factor in choice of poultry as livelihood strategy. The findings are reflection of a study done in Mandara Mountain of Cameroon by Riddell and Campbell (2000) that observed that there is linkage in small land size and intensive farming systems. Overtime farmers have developed complex farming systems based on their land size and demand of poultry products. Similarly, Lanet Division, being a peri-urban area with decreased land size, farmers have adopted complex systems of poultry keeping such as battery cage system. This system accommodates thousands of poultry in a unit occupying a small area of land. This confirms that with less than 2.4 acres of land farmers are able to keep large number of poultry. Due to its proximity to Nakuru town, traders and brokers are able to buy from the farms and transport them town where their demands is unlimited, thus influencing choice of this livelihood strategy

4.6 Credit Accessibility and Choices of Livelihood Strategy

To ascertain the third objective, the following hypothesis was tested.

H₀₃: There is no statistically significant influence of credit accessibility on smallholder farmers' choice of livelihood strategy in Lanet Division, Nakuru County. The livelihood strategies that smallholders' farmers in Lanet Division were involved included poultry keeping, zero grazing, Vegetable growing and Grain growing. The study sought to establish whether credit accessibility had any significant influence on farmers' choice of these strategies.

Credit accessibility in this study was predicted through one-item to which farmers were asked to score a 5-point Likert scale (strongly disagree, disagree, undecided, agree, strongly agree). This was whether famers access loan to fund their farming activities.

First, the research established whether credit accessibility influenced choice of poultry keeping as a livelihood strategy. Table 4.12 presents results of logistic regression analysis between choice of livelihood strategy and credit accessibility.

Table 4.12

Results of logistic regression analysis for poultry keeping and credit accessibility

	95% C.I.for EXP(B)						
	B	S.E.	Wald	Sig.	Exp(B)	Lower	Upper
Can Get Loan (Strongly Disagree)			4.864	0.088			
Can Get Loan(Disagree)	-0.258	0.526	0.240	0.624	0.773	0.276	2.166
Can Get Loan(Agree)	-2.516	1.152	4.769	0.029	0.081	0.008	0.773
Constant	0.318	0.465	0.470	0.493	1.375		

Omnibus $\chi^2(2) = 7.803$, $p < .001$, $R^2 = 0.79$ (Cox & Snell), 0.105 (Nagelkerke).

A logistic regression analysis shows that there is significant influence of credit accessibility on the choice to keep poultry ($X^2(2) = 7.803$, $P < 0.001$). The model explained 10.5% (Nagelkerke R^2) variance in choice of keeping poultry as livelihood strategy.

The model classified 18.4% correctly those did not choose poultry as a livelihood strategy, and 97.8% those that choose poultry as livelihood strategy. Farmers who strongly agreed they can get loan to fund farming activities were 0.081 times less likely to choose poultry as livelihood strategy compared to those who strongly felt they cannot get loan to fund farming activities.

However, credit accessibility did not influence significantly the choice of zero grazing as livelihood strategy as a result presented Table 4.13 shows.

Table 4.13

Results of logistic regression analysis for zero grazing and credit accessibility

	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Can Get Loan(Strongly Disagree)			1.080	0.583			
Can Get Loan(Disagree)	-0.110	0.595	0.034	0.854	0.896	0.279	2.875
Can Get Loan(Agree)	0.624	0.830	0.566	0.452	1.867	0.367	9.487
Constant	-1.030	0.521	3.906	0.048	0.357		

Omnibus $\chi^2(2) = 1.03$, $p < 0.001$, $R^2 = 0.11$ (Cox & Snell), 0.016 (Nagelkerke).

A logistic regression analysis shows that there is no significant influence of credit accessibility on the choice of keeping zero grazing. ($X^2(2) = 1.033$, $P < 0.001$). The model explained 1.6% (Nagelkerke) viable in choice of keeping zero grazing as a livelihood strategy.

The model classified 100% correctly those who did not choose zero grazing as a livelihood strategy. Access to bank loan did not influence the choice of zero grazing as livelihood strategy. It was observed that farmers accessed loan for their farms from table banking and merry go round groups.

Likewise, credit accessibility did not influence significantly the choice of vegetable growing as a livelihood strategy as results presented in Table 4.14.

Table 4.14

Results of logistic regression analysis for vegetable growing and credit accessibility

	B	S.E.	Wald	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Can Get Loan (Strongly Disagree)			2.142	0.343			
Can Get Loan(Disagree)	0.783	0.536	2.129	0.145	2.187	0.764	6.258
Can Get Loan(Agree)	0.539	0.791	.464	0.496	1.714	0.364	8.085
Constant	-0.539	0.476	1.284	0.257	0.583		

A logistic regression analysis shows that their insignificant influence of credit accessibility on the choice to grow vegetables. ($X^2(7) = 2.209$, $P < 0.001$).

The model explained 3.0% (Nagelkerke R²)- variance in choice of vegetable growing as livelihood strategy. The model classified 26.1% correctly those did not choose vegetable growing and 85.7% correctly of those that chose vegetable growing as a livelihood strategy. Hence it was observed that farmers access loan for their vegetable growing from merry go round and table banking.

Moreover, credit accessibility did not influence significantly the choice of grain growing as livelihood strategy growing, results presented in Table 4.15.

Table 4.15

Results of logistic regression analysis for grain growing and credit accessibility

B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)	
					Lower	Upper
Can Get Loan (Strongly Disagree)		4.354	0.113			
Can Get Loan(Disagree)	0.147	0.557	0.070	0.791	1.159	0.389 3.453
Can Get Loan(Agree)	1.620	0.848	3.648	0.056	5.056	0.959 26.664
Constant	-0.773	0.494	2.454	0.117	0.462	

Omnibus $\chi^2(2) = 4.819, p < .001, R^2 = 0.049$ (Cox & Snell), 0.067 (Nagelkerke).

A logistic regression analysis shows that their insignificant influence of credit accessibility on the choice to grain growing. ($X^2_2 = 4.89, P < 0.001$).

The model explained 6.7% (Nagelkerke R²) variance in choice of grain growing as livelihood strategy. The model classified 94.9% correctly those did not choose grain growing and 19.4% correctly of those that choose grain growing as a livelihood strategy. Those who strongly agreed that they can get loan for farming purpose were 5.056 times more likely to choose grain growing as livelihood strategy than those who strongly felt they are not able to get loan to fund their farming activities. Therefore, the null hypothesis that credit accessibility has no significant influence on choice of livelihood strategies was rejected. According to Samuel (2006), the ease with which farmers can access credit usually influence the choice of livelihood strategies of smallholder farmers. Therefore, enhanced opportunities for accessing credit facilities would lead informed choice of livelihood strategies in the area.

4.7 Social Status and Choices of Livelihood Strategy

The fourth objective sought to establish the influence of social status on smallholders' farmers' choices of livelihood strategy in Lanet Division, Nakuru East Sub- County, Kenya.

To ascertain the fourth objective, the following hypothesis was tested.

Ho4: There is no statistically significant influence of social status on smallholder farmers' choice of livelihood strategy in Lanet Division, Nakuru County. The livelihood strategies that smallholder' farmers in Lanet Division were involved in included poultry keeping zero grazing, Vegetable growing and Grain growing. The study sought to determine whether social status had any significant influence on farmers' choice of these strategies.

Social status in this study was accessed through 3-items to which farmers were asked to score a 5-point Likert scale (strongly disagree, disagree, undecided, agree and strongly agree). These were: Gender, Age and Education level whether they influenced the choice of livelihood strategy.

First, the research established whether social status influenced choice of poultry keeping as a livelihood strategy. Table 4.16 presents results of logistic regression analysis between choice of livelihood strategy and social status.

Table 4.16

Results of logistic regression analysis for poultry and Social Status

	B	S.E.	Wald	Sig.	Exp(B)	95% EXP(B) Lower	C.I.for Upper
Gender (Male)	1.785	0.614	8.457	0.004	5.957	1.789	19.832
Age (26 -35)			3.894	0.273			
Age (36 -45)	0.517	0.957	0.292	0.589	1.678	0.257	10.944
Age(46 -55)	-0.045	0.932	0.002	0.961	0.956	0.154	5.940
Age (56 and above)	1.115	0.978	1.298	0.255	3.049	0.448	20.748
Education level (None)			4.264	0.371			
Education level (Primary)	-1.751	1.040	2.834	0.092	0.174	0.023	1.333
Education level (Secondary)	-0.485	0.875	0.307	0.579	0.616	0.111	3.421
Education level (College)	-0.255	1.018	0.063	0.802	0.775	0.105	5.692
Education level (University)	-0.076	1.438	0.003	0.958	0.927	0.055	15.521
Constant	-1.376	1.334	1.064	0.302	0.253		

Variable(s) entered on step 1: Gender, Age, Educ level

Omnibus $\chi^2(8) = 17.739$, $p < .001$, $R^2 = .170$ (Cox & Snell), .227 (Nagelkerke).

A logistic regression analysis shows that there is significant influence of gender on the choice to poultry keeping. ($X^2(8) = 17.739$, $P < 0.001$).

The model explained 22.7% (Nagelkerke R^2)- variance in choice of poultry keeping as livelihood strategy. The model classified 77.6% correctly those did not choose poultry keeping and 63% correctly of those that chose poultry keeping as a livelihood strategy.

Nevertheless, women are 5.97 times likely to choose poultry keeping as a livelihood strategy than men. Nevertheless, age and education level does not significantly influence the choice of poultry keeping.

Moreover, social status did not influence significantly the choice of Zero grazing as a livelihood strategy as results presented in Table 4.17.

Table 4.17

Results of logistic regression analysis for Zero Grazing and Social Status

	B	S.E.	Wald	Sig.	Exp(B)	95% EXP(B) Lower	C.I.for Upper
Gender (Male)	1.953	1.012	3.724	0.054	7.048	0.970	51.220
Age (26 – 35)			2.262	0.520		0.000	
Age (36 -45)	21.824	16457.460	0.000	0.999	3006581706.702	0.000	
Age(46 – 55)	20.653	16457.460	0.000	0.999	931861616.903	0.000	
Age(56 and above)	21.630	16457.460	0.000	0.999	2476105255.838	0.000	
Education level (None)			7.426	0.115		0.000	
Education level(Primary)	20.516	13757.867	0.000	0.999	812888531.450	0.000	
Education level (Secondary)	19.669	13757.867	0.000	0.999	348340958.410	0.000	
Education level (College)	22.199	13757.867	0.000	0.999	4374591174.443	0.000	
Education level (University)	-0.411	26977.222	0.000	1.000	0.663	0.000	
Disagree)							
Constant	-44.375	21450.579	0.000	0.998	0.000	0.000	

Variable(s) entered on step 1: Gender, Age, and Education Level

Omnibus $\chi^2(8) = 21.963$, $p < 0.001$, $R^2 = 0.219$ (Cox & Snell), 0.339 (Nagelkerke).

A logistic regression analysis shows that there is no significant influence of social status on the choice to zero grazing. ($X^2(8) = 21.963$, $P < 0.001$).

The model explained 33.9% (Nagelkerke R^2)- variance in choice of zero grazing as livelihood strategy. The model classified 97.1% correctly those did not choose zero grazing and 15.8% correctly of those that chose zero grazing as a livelihood strategy.

Age and education level did not influence choice of livelihood strategy. However, it was noted women were 7.048 times likely to choose zero grazing as a livelihood strategy than men.

Likewise, social status did not influence significantly the choice of vegetable growing as a livelihood strategy as results presented in Table 4.18

Table 4.18

Results of logistic regression analysis for Vegetable Growing and Social Status

	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for	
						Lower	Upper
Gender(Male)	-	0.513	0.715	0.398	0.648	0.237	1.770
	0.433						
Age (26 – 35)			0.813	0.846			
Age(36 – 45)	-	0.948	0.101	0.751	0.740	0.116	4.743
	0.301						
Age(46 -55)	0.210	0.934	0.051	0.822	1.234	0.198	7.704
Age(56 and above)	0.078	0.957	0.007	0.935	1.081	0.166	7.050
Education level (None)			3.511	0.476			
Education level (Primary)	1.198	0.944	1.611	0.204	3.312	0.521	21.057
Education level (Secondary)	0.732	0.813	.811	0.368	2.080	0.423	10.240
Education level (College)	1.349	0.980	1.895	0.169	3.854	0.565	26.300
Education level (University)	1.925	1.370	1.974	0.160	6.855	0.468	100.484
Constant	-	1.275	0.156	0.693	0.605		
	0.503						

Omnibus $\chi^2(8) = 5.283$, $p < 0.001$, $R^2 = 0.54$ (Cox & Snell), 0.072 (Nagelkerke).

A logistic regression analysis shows that there is no significant influence of social status on the choice to vegetable growing. ($X^2(8) = 5.283$, $P < 0.001$).

The model explained 7.2% (Nagelkerke R^2)- variance in choice of vegetable growing as livelihood strategy. The model classified 52.2% correctly those did not choose vegetable growing and 59.2% correctly of those that chose vegetable growing as a livelihood strategy.

Moreover, social status did not influence significantly the choice of grain growing as a livelihood strategy as results presented in Table 4.19.

Table 4.19

Results of logistic regression analysis for Grain Growing and Social Status

	B	S.E.	Wald	Sig.	Exp(B)	95% EXP(B) Lower	C.I.for Upper
Gender(Male)	-1.214	0.544	4.984	0.026	0.297	0.102	0.862
Age (26 -35)			4.940	0.176			
Age (36 -45)	-0.612	0.963	0.405	0.525	0.542	0.082	3.577
Age (46 -55)	-1.235	0.974	1.608	0.205	0.291	0.043	1.962
Age(56 and above)	-1.828	1.013	3.256	0.071	0.161	0.022	1.171
Education level (None)			4.836	0.305			
Education level (Primary)	-1.008	0.958	1.106	0.293	0.365	0.056	2.387
Education level (Secondary)	-1.290	0.831	2.408	0.121	0.275	0.054	1.404
Education level (College)	-2.248	1.042	4.655	0.031	0.106	0.014	0.814
Education level (University)	-1.039	1.368	0.577	0.447	0.354	0.024	5.163
Constant	2.818	1.351	4.353	0.037	16.738		

Omnibus χ^2 (8) = 10.628, $\rho < 0.001$, $R^2 = 0.106$ (Cox & Snell), 0.144 (Nagelkerke).

A logistic regression analysis shows that there is significant influence of gender and education level on the choice to grain growing. (X^2 (8) = 10.628 $P < 0.001$).

The model explained 14.4% (Nagelkerke R^2)- variance in choice of grain growing as livelihood strategy. The model classified 86.5% correctly those did not choose grain growing and 27.8% correctly of those that chose grain growing as a livelihood strategy.

It was observed that women are 0.297 times likely to choose grain growing as a livelihood strategy compared to men. Also farmers with college level of education are 0.106 times likely to choose grain growing as a livelihood strategy compared to farmers without any formal education. Therefore, the fourth null hypothesis that social status has no statistically significant influence on smallholder farmers' choice of livelihood in Lanet Division was rejected. Therefore, social status especially gender and education level is considered in choice of livelihood strategy. It has been noted that gender influences several aspects of agricultural activities in the community including those relating to choices of livelihood strategy. Land in African communities is owned by men. Yet women are important participants in agricultural

activities according to Wall, Pettibane and Kesley, (200). On the other hand, education level, is one of the social status that significantly influence individual's choice of livelihood strategy. Education has always played a crucial role in forming attitudes (Hague, 2009). Farmers adoption of specific livelihood strategy thus may be influenced by their level of education.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusions and recommendations of the study. In addition, the chapter will present suggestions for further studies. In doing this the researcher will base the information on the study objectives. Essentially, the study had four objectives which form the basis of this chapter.

5.2 Summary of the Study Findings

The study drew a summary from the findings of the data analysis. Given that there were four objectives in the study, the summary of findings was presented in tandem with each study objective. The summary was as presented hereafter.

5.2.1 Livelihood Strategy Choices

The study established that most of the farmers in the area practiced poultry farming and zero grazing in their farms. Other respondents practiced vegetable and grain growing. A majority of the farmers indicated that they had some success in their farming activities while still a good percentage indicated that there was great success in their farming activities. On the other hand, majority of the farmers indicated that they practiced their farming activities as income generating activities. A look into the farmers' perception towards their livelihood strategy choices revealed that they acknowledged that their level of education influenced their choices of farming activities, that there was need for them to undergo further training on farming activities and that the amount of income they derive from their farming activities helps them lead a stable life.

Respondents further acknowledged that nearness to Nakuru town has helped them to access market for their produce, that the market is readily available and that there are enough customers who purchase their farming products. The researcher also noted that most of the respondents had up to secondary school education bringing to the fore the need for further training for the farmers. The respondents however could not agree that gender and age influences their choice of farming activities. They further remained indifferent on the sufficiency of their land on their current farming activities and on whether their level of education was adequate for their handling of issues to do with their farming activities.

5.2.2 Market Accessibility and Small Holder Farmers Choices of Livelihood Strategy

The findings demonstrated a mixed perception from the respondents in regard to market accessibility. They generally agreed that the market for their farm produce was readily available, that the cost of accessing the market is affordable and that prices for their products were competitive. In addition, they agreed that access to the market makes them informed of goods in demand, that proximity to an urban Centre provided ready market for their produce. They disagreed that they had to travel for long distances to market their products and that they had to practice contract farming to secure the market.

Logistic regression analysis indicated that there was a weak positive significant relationship between market accessibility and small holder farmers' livelihood strategy choices. Further, market accessibility had a statistically insignificant influence on livelihood strategy choices in Lanet division in Nakuru East Sub-county Kenya. The findings also showed that market accessibility could not account significantly on the total variance in the small holder farmers' livelihood strategy choices.

5.2.3 Land Size and Choices of Livelihood Strategy

The findings indicated that a majority of the farmers had less than 2.4 acres of land in this area. A majority of these, were the fully owners of the land and they had a titled deed to that effect. A few of the farmers had leased the land or the land had been given to them as a grant. The respondents contended that intense competition for land had led to the rise of the cost of land in the area and that the expansion of the urban center is causing a decline in the land size in this area. They also agreed that due to the small size of the land, they are forced to be creative to maximize the output from their farming activities, that the reduced size of the land have led to farmers utilizing multiple cropping to increase their yield and also that high population continues to dwindle the land availability for farming. The farmers however were apprehensive on whether they felt their land was so small for their farming activities and that conversion of farming lands into settlement areas have led to a reduction in the extension services in the area.

Inferential analysis indicated that there was no statistically significant linear relationship between land size and small holder farmer livelihood strategy choice in Lanet division, Nakuru East Sub-county in Kenya. Further, land size had no statistically significant influence on small holder farmer livelihood strategy choices and that it could only account for significant percentage of the total variance in choice of poultry as livelihood strategy.

5.2.4 Credit Accessibility and Choices of Livelihood Strategy

Descriptive statistics indicated that a majority of the farmers preferred merry go round groups and table banking arrangement as their source of credit. As such, they shied away from commercial banks and cooperative societies. Gender, age, marital status and experience were shown not to have any significant influence on the respondents' choices of their sources of credit. However, the education level of the respondents was shown to influence the farmers' choice of the source of credit with the most educated preferring credit from commercial banks and cooperative societies while the least educated going for merry go round and table banking arrangements. In general, respondents shied away from banks since they know that banks insist on land documents before advancing the loans to farmers. The respondents disagreed that they are able to boost their farming through loans from banks and that being the owner of the land has enabled them access credit using it as collateral. Respondents however remained indifferent on whether access to loan enables them to access farm inputs, whether access to loans have led to an increase in productivity in their farming activities and whether lack of collateral hinders them to access credit.

Logistic regression analysis indicated the presence of a statistically significant linear correlation between credit accessibility and livelihood strategy choices. In addition, credit accessibility had a significant influence on small holder farmer livelihood strategy choices. Credit accessibility accounted for up to 17.8% of the total variance in livelihood strategy choices among the small holder farmers' livelihood strategy choices.

5.2.5 Social Status and Choices of Livelihood Strategy

Findings on social status indicated that a majority of the respondents had family sizes comprising of one to five members. The income earnings for the majority of these families ranged between 10,000 and 20,000 Kenyan shillings. The respondents agreed that their level of education helps them in making decisions regarding their farming, that education has made them have positive perception towards farming and that due to their education, they are able to adapt to modern technology in agriculture. They further agreed that having education enables them access relevant information related to farming and that most of the farming decisions are made at an individual level rather than at a family level. They however disagreed that gender influences the ownership of land in the area and that they are able to purchase farm inputs at a cheaper cost.

Inferential statistics demonstrated that social status has positive average significant linear correlation with livelihood strategy choices among small holder farmers in Lanet area of

Nakuru East Sub-county Kenya. Social status was shown to increase the strength of prediction of the independent variables on the dependent variables by increasing the percentage of the total variance of livelihood strategy choices that can be explained by the independent variables jointly. Therefore, the researcher observed that social status had a significant moderating effect on the relationship between factors influencing livelihood strategy choices.

5.3 Conclusion of the Study

The researcher drew pertinent conclusions from the research findings based on the study objectives. The study found out that market accessibility negatively influences small holder farmers' livelihood strategy choice in Lanet division in Nakuru East Sub-county Kenya. This finding leads to the conclusion that market accessibility is a significant predictor of small holder farmer livelihood strategy choice. Increasing accessibility to the market informs the farmers' livelihood strategy choices. A majority of the respondents had less than 2.4 acres of land in this area. The study findings indicated that land size has no significant influence on livelihood strategy choices. Therefore, the researcher concluded that the size of the land is not a significant determinant of small holder farmers' livelihood strategy choices in Lanet Division, Nakuru East Sub-County Kenya. Therefore, farmers adopt various livelihood strategy choices regardless of the size of land they have. Farmers adapt to creative means of maximizing their farms productivity.

From the findings, the researcher established that the level of education influences the farmers' choice of credit source. The observation was further supported by the findings that credit accessibility influences farmers' livelihood strategy choices among farmers in Lanet division, Nakuru East Sub-county Kenya. Therefore, the researcher concluded that credit accessibility significantly influences the farmers' livelihood strategy choices.

The study findings indicated that social factors have a positive average significant relationship with livelihood strategy choices for small holder farmers in Lanet Division, Nakuru East sub-county Kenya. The findings further indicated that social factors as a moderating variable enhances the influence of the determinants of livelihood strategy choices. Therefore, the researcher concluded that social factors are important as a moderating factor on factors influencing small holder farmers' livelihood strategy choices.

5.4 Recommendations of the Study

5.4.1 Policy Recommendations

Based on the findings of the study, the researcher recommended the following policy recommendations;

1. The county and the national government should empower small holder farmers through awarding them contracts to supply their farm produce in government departments to boost their market.
2. The government should come up with policies to ensure that there is proper land regulation that protect land that is for farming activities. This will ensure that farmers are insured from competition for commercial land and make their livelihoods sustainable.
3. The government should come up with strategic initiatives to boost farmer's access to credit facilities thus enhancing their farming activities.
4. The government should set up training centers for farmers who cannot access higher education and expose them to the current farming methods. This will go a long way in helping them improve the productivity in their farming activities.

5.4.2 Recommendations for Implementation

The researcher recommended that farmers should

1. Participate in agricultural workshops to enhance their skills in their farming activities. This will enable them enhance their production in their farms hence enhancing their earnings.
2. Make use of the agricultural extension services to increase their knowledge in the current trends in farming methods. This will help them enhance the quality of their products.
3. Embrace the current technology in their farming to help them in increasing their farm produce.
4. Embrace technology in accessing the market and advertising their products. This will enable them to expand their market beyond the region of their operation.
5. Make use of the financial innovations provided by the banks to access loan facilities from the banks to enable them boost their farming activities.

5.4.3 Recommendations for Further Studies

The study recommends that future studies should focus on the following;

1. The effect of level of education on livelihood strategy choices in peri-urban areas in Kenya.
2. Future scholars should also replicate this study in other regions in Kenya to enable the generalization of findings.
3. The scholars should focus on other factors likely to influence small holder farmer livelihood strategy choices.

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APPENDICES

APPENDIX A: Questionnaire for Farmers

Dear Respondent,

I am pursuing a master's degree in Egerton University. Currently, am carrying out a study on factors influencing livelihood strategy choice among peri-urban smallholder farmers in Lanet Division. The information you give will be treated with great confidentiality and will be used for research purposes only. Therefore, do not write your name on any part of the questionnaire. Respond to the items by ticking (✓) or writing in the spaces provided.

SECTION A: PERSONAL DATA

1. What is your gender? Male [] Female []
2. What is your age bracket?
Below 25 years [] 26- 35 years [] 36- 45 years [] 46- 55 years []
56 and above []
3. For how long have you been in farming experience?
Below 5 years [] 6 – 10 years [] 11-15 years [] Over 16 years []
4. State your marital status.
Single [] Married [] Divorced [] Window [] Separated []
5. State the amount of land you occupy in acres
Less than 2.4 [] 2.5- 4.9 [] 5- 7.4 [] 7.5- above []
6. State status of the land you occupy.
Owned with title deed [] Leased []
Grant [] Any other [] Specify.....
7. What is the size of your household?
1-2 [] 3- 5 []
6- 8 [] 9- 11 [] 12 and above []
8. Indicate your highest level of your formal education.
No formal education [] Primary []
Secondary [] College []
University []
9. What is your monthly income from your operations?
Less than 5,000 [] 5,000—10,000 [] 10,001—20,000 []
20,001—30,000 [] 30,001 –50,000 [] 50,000 and above []

Section B

This section will be eliciting responses to the various study variables. Kindly follow the instructions given in each section.

The following factors relate to your social status. Using a tick mark (✓) indicate your level of agreement with the statements. Use the following as the key in your response

Strongly Agree-SA, Agree-A, Undecided-U, Disagree-D and Strongly Disagree-SD

No	Statement	SA	A	U	D	SD
11	My level of education helps me in making decisions in farming					
12	Education has made me have positive perception towards farming					
13	Due to my education am able to adapt modern technology in agriculture					
14	Gender influences the ownership of land in this area					
15	Am able to purchase the farm inputs at a cheaper cost					
16	Having education enables me access relevant information in regard to farming					
17	Most of the farming decisions are made at an individual level rather than at family level					

The following factors relate to Land size. Using a tick mark (✓) indicate your level of agreement with the statements. Use the following as the key in your response

Strongly Agree-SA, Agree-A, Undecided-U, Disagree-D and Strongly Disagree-SD

No	Statement	SA	A	U	D	SA
18	I feel that my land is very small for my farming activities					
19	Intense competition for land have led to the rise of the cost of land					
20	The expansion of the urban centre is causing a decline in the land size in this area					
21	Due to the small size of the land, am forced to be creative in order to maximize the output from farming activities					
22	Conversion of farming lands into settlement are have led to a reduction of extension services in this area					
23	Reduced size of the land have led to farmers utilize multiple cropping to increase their yield					
24	High population continues to dwindle land available for farming					

The following factors relate to market accessibility. Using a tick mark (✓) indicate your level of agreement with the statements. Use the following as the key in your response

Strongly Agree-SA, Agree-A, Undecided-U, Disagree-D and Strongly Disagree-SD

No	Statement	SA	A	U	D	SD
25	Market for my farm produce is readily available					
26	I have to travel long distance to market my farm products					
27	Cost of accessing the market is affordable					
28	Prices for my products are competitive					
29	Access to market informs me on farming activities to engage in					
30	I practice contract farming to secure my market					
31	Proximity to an urban centre provides ready market for our produce					

The following factors relate to Credit access in your farming activities.

Use a tick (✓) in response on the following

32. Where do you usually get your funding for farming activities?

Loans from Commercial banks [] AFC [] Cooperative society []

Merry go round groups [] Table Banking []

Using a tick mark (✓) indicate your level of agreement with the following statements.

Use the following as the key in your response

Strongly Agree-SA, Agree-A, Undecided-U, Disagree-D and Strongly Disagree-SD

No	Statement	SA	A	U	D	SD
33	I am able to get loans from banks to boost my farming					
34	Access to loans would enable me access farm inputs					
35	Access to loans have led to an increase in productivity in my farming activities					
36	Lack of collateral hinders me from accessing bank loans					
37	Being the owner of the land has enabled me access credit using it as collateral					
38	The banks have placed the amount size of land that can be used as collateral to qualify for credit					
39	The banks insists on land documents before advancing the loans to farmers					

The following factors relate to the Livelihood Strategy Choices in your farming activities.

Use a tick (✓) in response on the following

40. Indicate by a tick (✓) the main farming activity you practice in your farmland.

Zero grazing [] poultry Keeping [] Bee Keeping []

Growing vegetables [] Grains growing [] growing flowers []

Tree Growing []

41. What is the level of success of the farming activity you practice?

Great success [] Some success [] Least success [] No success []

42. Why did you choose these farming activities?

Income earning [] Source of food []

Recreation [] Lack of other alternatives []

Using a tick mark (✓) indicate your level of agreement with the following statements.

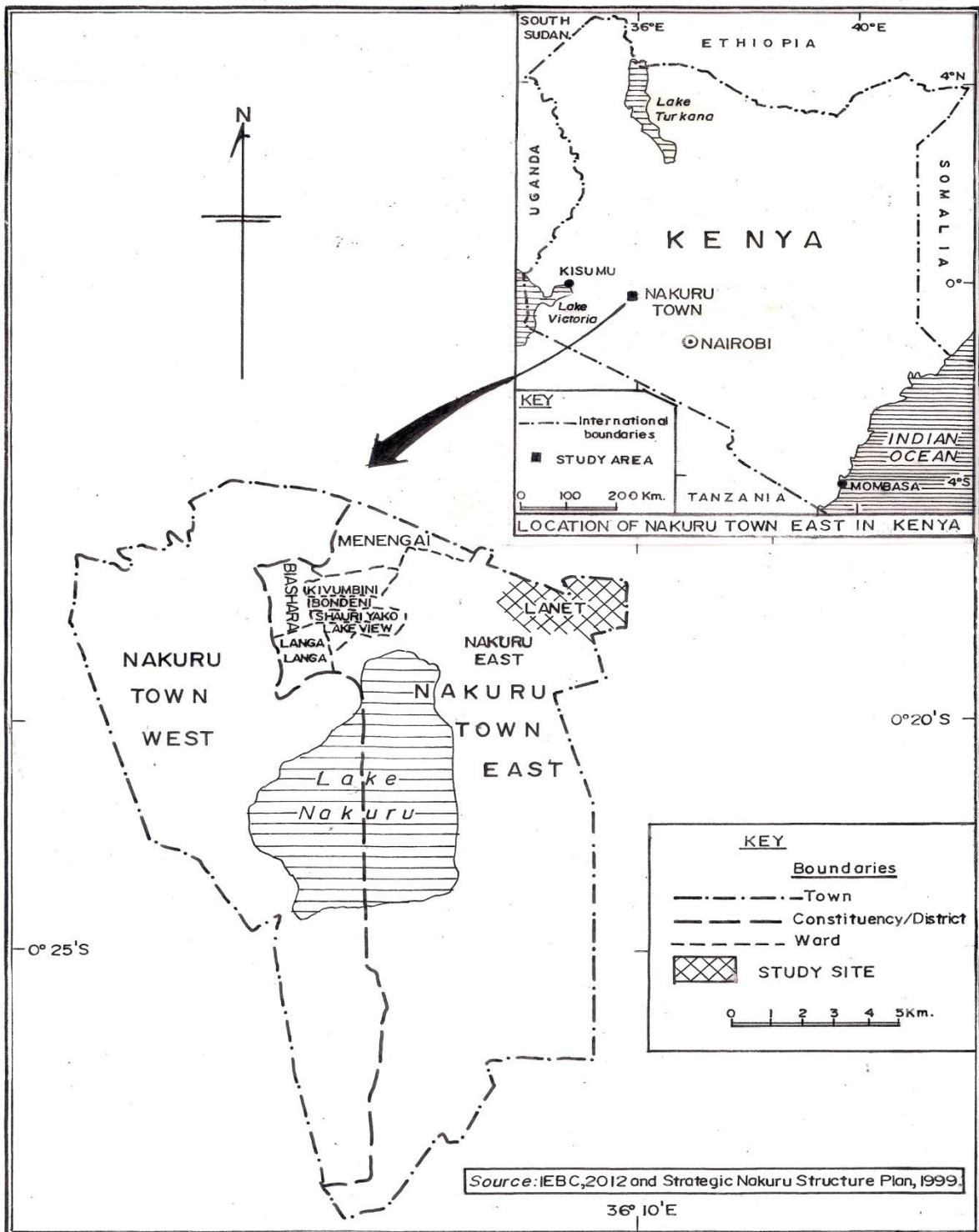
Use the following as the key in your response

Strongly Agree-SA, Agree-A, Undecided-U, Disagree-D and Strongly Disagree-SD

No	Statement	SA	A	U	D	SD
43	The level of formal education influences my choice of my farming activities.					
44	The level of my education is adequate in handling issues in farming activities					
45	There is need for me to undergo further training on farming activities.					
46	Gender influences choice of my farming activities?					
47	Age influences choice of my farming activities?					
48	The amount of land available to me is sufficient for current farming activities.					
49	The amount of income derived from my farmland farming activities has helped to lead a stable life.					
50	Nearness of my farm land to Nakuru Town has helped to access market for my farm produce.					
51	The market for my farm produce is readily available					
52	There are enough customers to buy my farm produce.					

END. THANKYOU

APPENDIX B: Map of Study Area



Source: Adapted from the map drawn by Independent Electoral and Boundaries Commission (IEBC), Daily Nation 9th January, 2012 page XXVI.

APPENDIX C: Letter of Research Authorization

EGERTON

Tel: Pilot: 254-51-2217620
254-51-2217877
• 254-51-2217631
Dir. line/Fax: 254-51-2217847
Cell Phone
Extension: 3606



UNIVERSITY

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Egerton, Njoro, Kenya
Email: bpgs@egerton.ac.ke
www.egerton.ac.ke

OFFICE OF THE DIRECTOR, GRADUATE SCHOOL

Ref:.....EM21/2470/09.....

Date:.....5th May, 2015.....

The Secretary,
National Commission for Science Technology and Innovation
P. O. Box 30623-00100,
NAIROBI.

Dear Sir,

**RE: REQUEST FOR RESEARCH PERMIT – TABITHA WANJIRU
GITHAIGA REG. NO. EM21/2470/09**

This is to introduce and confirm to you that the above named student is in the Department of Applied Community Development Studies, Faculty of Education and Community Studies.

She is a bonafide registered Masters student in this University. Her research topic is entitled “Influence of Selected Factors on the Livelihood Strategy Choice Among Peri-Urban Smallholder Farmers in Lanet Division on Nakuru East Sub-County, Kenya.”

She is at the stage of collecting field data. Please issue her with a research permit to enable her undertake the studies.

Yours faithfully,


Prof. Michael A. Okiror
DIRECTOR, BOARD OF POSTGRADUATE STUDIES



MAO/ear

*“Transforming Lives Through Quality Education”
Egerton University is ISO 9001:2008 Certified*

APPENDIX D: Research Permit

THIS IS TO CERTIFY THAT:
MS. TABITHA WANJIRU GITHAIGA
of EGERTON UNIVERSITY, 12510-20100
nakuru, has been permitted to conduct
research in Nakuru County

Permit No : NACOSTI/P/15/9905/6567
Date Of Issue : 16th June, 2015
Fee Received : Ksh 1000

on the topic: **INFLUENCE OF SELECTED
FACTORS ON THE LIVELIHOOD
STRATEGY CHOICES AMONG
PERI-URBAN SMALLHOLDER FARMERS IN
LANET DIVISION OF NAKURU EAST
SUB-COUNTY, KENYA**



for the period ending:
31st December, 2015


Applicant's
Signature


Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.



REPUBLIC OF KENYA



National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. A **5387**

CONDITIONS: see back page