

**FACTORS INFLUENCING SMALLHOLDER FARMING  
ENTREPRENEURSHIP IN TAITA TAVETA COUNTY,  
KENYA**

**COSMAS NGUTA MUNYEKE**

**DOCTOR OF PHILOSOPHY**

**(Entrepreneurship)**

**JOMO KENYATTA UNIVERSITY OF  
AGRICULTURE AND TECHNOLOGY**

**2019**

**Factors Influencing Smallholder Farming Entrepreneurship in Taita  
Taveta County, Kenya**

**Cosmas Nguta Munyeke**

**A Thesis Submitted in Partial Fulfillment for the Degree of Doctor of  
Philosophy in Entrepreneurship in the Jomo Kenyatta University of  
Agriculture and Technology**

**2019**

## DECLARATION

This thesis is my original work and has not been presented for a degree or any other award in any other university

Signature.....Date:.....

**Munyeke Cosmas Nguta**

This thesis has been submitted for examination with our approval as the university supervisors.

Signature:.....Date: .....

**Prof. Elegwa Mukulu**

**JKUAT, Kenya**

Signature:..... Date:.....

**Prof. Willy Muturi**

**JKUAT, Kenya**

## **DEDICATION**

This thesis is dedicated to my children: Hope and Hike so as to inspire them to strive to achieve much more than I have academically achieved and to my dear wife Jacinta in recognition of her high academic achievement and her love for books.

## **ACKNOWLEDGEMENT**

I owe a huge amount of gratitude to my Supervisors: Prof. Elegwa Mukulu and Prof. Willy Muturi for their guidance during the writing of the research proposal and the final thesis. I am also indebted to the Taita Taveta Agriculture County office for giving me the necessary data on my target population and their assistance in the data collection exercise, all the respondents for giving out all the information needed in the questionnaire willingly. Much thanks go to my family for their encouragement and moral support as I undertook the entire exercise.

Lastly, but most important, may glory and honor be to the Almighty God through whom all things are possible.

## TABLE OF CONTENTS

<b>DECLARATION</b> .....	<b>ii</b>
<b>DEDICATION</b> .....	<b>iii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iv</b>
<b>TABLE OF CONTENTS</b> .....	<b>v</b>
<b>LIST OF TABLES</b> .....	<b>xi</b>
<b>LIST OF FIGURES</b> .....	<b>xiv</b>
<b>LIST OF APPENDICES</b> .....	<b>xv</b>
<b>DEFINITION OF TERMS</b> .....	<b>xvi</b>
<b>ACRONYMS AND ABBREVIATIONS</b> .....	<b>xx</b>
<b>ABSTRACT</b> .....	<b>xxiii</b>
<b>CHAPTER ONE</b> .....	<b>1</b>
<b>INTRODUCTION</b> .....	<b>1</b>
1.1 Background of the Study.....	1
1.1.1 Factors influencing smallholder farming entrepreneurship .....	6
1.1.2 Smallholder farming entrepreneurship in Taita Taveta County.....	9
1.2. Statement of the Problem.....	10
1.3 Objectives of the Study .....	12
1.3.1 General Objective.....	12

1.3.2 Specific Objectives.....	12
1.4 Research Questions .....	12
1.5 Hypotheses .....	13
1.6 Significance of the Study .....	13
1.7 Scope of the Study .....	14
1.8 Limitation of the Study .....	14
<b>CHAPTER TWO .....</b>	<b>16</b>
<b>LITERATURE REVIEW.....</b>	<b>16</b>
2.1. Introduction .....	16
2.2 Theoretical Framework .....	16
2.2.1 Economic Perspective .....	16
2.2.2 Sociological and Anthropological Perspective .....	18
2.2.3 Psychological Perspective .....	19
2.3 Conceptual Framework .....	20
2.3.1 Access to Finance.....	22
2.3.2 Formal Education .....	25
2.3.3 Entrepreneurial Culture .....	28
2.3.4 Social Network.....	31

2.3.5 Smallholder Farming Entrepreneurship .....	33
2.4 Empirical Review .....	36
2.4.1 Influence of formal education on smallholder farming entrepreneurship.....	37
2.4.2 Influence of access to finance on smallholder farming entrepreneurship.....	38
2.4.3 Influence of entrepreneurial culture on smallholder farming entrepreneurship .....	39
2.4.4 Influence of Social network on Smallholder farming entrepreneurship .....	40
2.5 Critique of the Existing Literature .....	41
2.6 Research Gaps .....	43
2.7 Summary of the Reviewed literature.....	44
<b>CHAPTER THREE .....</b>	<b>45</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>45</b>
3.1. Introduction .....	45
3.2. Research Design.....	45
3.3 Research philosophy .....	46
3.4 Target population .....	47
3.5 Sample and Sampling Technique.....	48
3.6 Data Collection Instruments.....	51



3.7 Data Collection Procedure .....	52
3.8 Piloting of the Research Instruments .....	52
3.8.1 Reliability.....	53
3.8.2 Validity.....	54
3.9 Data Processing and Analysis .....	55
3.10 Diagnostic Tests .....	56
3.11 Hypotheses Testing.....	57
3.12 Analysis of Variance (ANOVA) Test.....	58
3.13 Analysis of qualitative data.....	58
3.14 Measurement of Variables .....	59
3.14 Ethical issues.....	61
<b>CHAPTER FOUR.....</b>	<b>63</b>
<b>RESEARCH FINDINGS AND DISCUSSION.....</b>	<b>63</b>
4.1 Introduction.....	63
4.2 Reliability.....	63
4.3 Response Rate.....	64
4.4 Demographic Information of the Study Sample .....	65
4.4.1 Gender of the Respondents .....	65

4.4.2 Age of the Respondents .....	66
4.4.3 Education Level of the Respondents.....	67
4.5 Descriptive Statistics.....	68
4.5.1 Smallholder Farming Entrepreneurship .....	69
4.5.2 Access to Finance.....	72
4.5.3 Formal Education.....	77
4.5.4 Entrepreneurial Culture.....	80
4.5.5 Social networks .....	83
4.6 Diagnostic Tests .....	86
4.7 Testing of the study hypotheses .....	90
4.7.1 Hypothesis H <sub>01</sub> : Access to finance has no significant influence on Smallholder farming entrepreneurship in Taita Taveta County .....	91
4.7.2 Hypothesis H <sub>02</sub> : Formal education has no significant influence on Smallholder farming entrepreneurship in Taita Taveta County .....	93
4.7.3 Hypothesis H <sub>03</sub> : Entrepreneurial culture has no significant influence on Smallholder farming entrepreneurship in Taita Taveta County.....	95
4.7.4 Hypothesis H <sub>04</sub> : Social network has no significant influence on Smallholder farming entrepreneurship in Taita Taveta County .....	97
4.8 Statistical Analysis of the Full Regression Model .....	98

4.9 Estimated Model Coefficients.....	100
4.10 Analysis of the Qualitative data .....	102
4.10.1 Smallholder Farming Entrepreneurship .....	102
4.10.2 Access to Finance.....	104
4.10.3 Formal Education .....	105
4.10.4 Entrepreneurial Culture.....	106
4.10.5 Social Networks .....	107
4.11 Summary of the hypotheses tested.....	109
<b>CHAPTER FIVE.....</b>	<b>111</b>
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>111</b>
5.1. Introduction .....	111
5.2. Summary of Findings.....	111
5.3 Conclusion .....	114
5.4 Recommendations .....	116
5.5 Areas for Further Research .....	117
<b>REFERENCES.....</b>	<b>119</b>
<b>APPENDICES .....</b>	<b>136</b>

## LIST OF TABLES

<b>Table 3.1:</b> Target Population.....	48
<b>Table 3.2:</b> Sample Size.....	50
<b>Table 3.3:</b> Cronbach’s Alpha Analysis for the Pilot instruments.....	54
<b>Table 4.1:</b> Reliability Statistics .....	63
<b>Table 4.2:</b> Response Rate.....	64
<b>Table 4.3:</b> Smallholder Farming Entrepreneurship .....	70
<b>Table 4.3:</b> Smallholder Farming Entrepreneurship (continued).....	72
<b>Table 4.4a:</b> The influence of Access to Finance on smallholder farming entrepreneurship .....	74
<b>Table 4.4b:</b> The influence of Access to Finance on smallholder farming entrepreneurship .....	76
<b>Table 4.5:</b> The influence of Formal education on smallholder farming entrepreneurship .....	79
<b>Table 4.6:</b> The influence of Entrepreneurial Culture on smallholder farming entrepreneurship.....	82
<b>Table 4.7:</b> The influence of Social Networks on smallholder farming entrepreneurship	85
<b>Table 4.8:</b> Reliability Test.....	86

<b>Table 4.9:</b> Normality Tests.....	87
<b>Table 4.10:</b> Homogeneity of Variances Test.....	88
<b>Table 4.11:</b> Multicollineality Test.....	89
<b>Table 4.12:</b> Correlation matrix.....	90
<b>Table 4.13:</b> t-test for Access to finance.....	91
<b>Table 4.14:</b> ANOVA for Access to Finance .....	92
<b>Table 4.15:</b> t-test for Formal education.....	94
<b>Table 4.16:</b> ANOVA for Formal Education.....	95
<b>Table 4.17:</b> t-test for Entrepreneurial culture.....	96
<b>Table 4.18:</b> ANOVA for Entrepreneurial Culture.....	96
<b>Table 4.19:</b> t-test for Social network.....	97
<b>Table 4.20:</b> ANOVA for Social network .....	98
<b>Table 4.21:</b> Model Summary.....	99
<b>Table 4.22:</b> ANOVA for the Full model .....	100
<b>Table 4.23:</b> Overall Model Coefficients.....	101
<b>Table 4. 24:</b> Farming Diversification .....	102
<b>Table 4.25:</b> Specialty Production .....	103

<b>Table 4.26:</b> Services Provided to Other Farmers .....	103
<b>Table 4.27:</b> Marketing of Farm Products .....	104
<b>Table 4.28:</b> Access to Finance.....	104
<b>Table 4.29:</b> Amount of Finance Accessed .....	105
<b>Table 4.30:</b> Improving Financial Access .....	105
<b>Table 4.31:</b> How formal Education is used .....	106
<b>Table 4.32:</b> Perception towards Self-employed Individuals .....	106
<b>Table 4.33:</b> Perception towards Assertive and Aggressive Individuals .....	107
<b>Table 4.34:</b> Extent of trying new things (innovation) .....	107
<b>Table 4.35:</b> Linkage with Business Service Providers .....	108
<b>Table 4.36:</b> Linkage with Financial Service Providers .....	108
<b>Table 4.37:</b> Collaborations with other farmers outside the county .....	109

## LIST OF FIGURES

<b>Figure 2.1:</b> Conceptual Framework .....	21
<b>Figure 4.1:</b> Gender of Respondents.....	66
<b>Figure 4.2:</b> Age of the respondents .....	67
<b>Figure 4.3:</b> Education level the respondents .....	68

## LIST OF APPENDICES

<b>Appendix I:</b> Board of Postgraduate Studies Approval Letter .....	136
<b>Appendix II:</b> Questionnaire .....	137
<b>Appendix III:</b> Interview Guide .....	143
<b>Appendix IV:</b> Research Authorization by Nacosti .....	145
<b>Appendix V:</b> Letter from the County Director of Agriculture Taita Taveta.....	146



## DEFINITION OF TERMS

- Absolute Poverty** Absolute poverty refers to a condition where a person does not have the minimum amount of income needed to meet the minimum requirements for one or more basic living needs over an extended period of time. (World Bank, 2015).
- Creativity index** This is an overall measure of regional economic potential according to a combination of underlying economic, social, and cultural factors (Mark, 2014).
- Culture** This is a collective programming of the mind which distinguishes the members of one group or category of people from the other and encompasses the values, norms, interpretations and modes of behavior that characterize societies or other social groups (Stefanovic, Prokic, & Rankovic, 2010).
- Diversification** In the context of farming, diversification is the practice of producing a variety of crops or animals, or both, on one farm (McElwee & Bosworth, 2010).
- Entrepreneurship** This is the ability to develop, organize and manage a business venture along with any of its risks in order to make a profit (Bula, 2012).

**Entrepreneurial**

**culture** This is an environment where someone is motivated to innovate, create and take risks (Uhlener, 2010 ).

**Farm Tourism** Farm tourism is the act of visiting a working farm or any agricultural, horticultural or agri-business operation for the purpose of enjoyment, education or active involvement in the activities of the farm or operation (Morgan, Marsden, & Miele, 2010).

**GDP per capita** Per capita GDP is a measure of the total output of a country that takes gross domestic product (GDP) and divides it by the number of people in the country. (McMillan, M., & Rodrik, 2011)

**Model Farmers** These are farmers in whose farms extension agents demonstrate new farming technologies. The extension agents use these farms to train other farmers. (Wade, 2010).

## **Smallholder**

**Farming** This involve engagement in raising of either crops or livestock or both in a land size of one to ten acres depending on the agro ecological zone (McElwee, 2008).

## **Smallholder**

**Farmers** Smallholder farmers are defined as those farmers with a low asset base, limited resource endowments, low farming technology, fragile market relationships, low access to services, finance and have a land size ranging from one to ten acres depending on the agro ecological zone (McElwee, 2008).

**Specialty products** In the farming perspective, specialty products are alternative crops or livestock or value-added farm products that have market niche that is not occupied (Nagayets, 2006).

## **Social**

**Network** This is the sum total of one's relationships that involves all the connections with the other people. (Gartner & Bellamy,

2009). Social network can also be defined as a patterned relationship between individuals, groups or organizations (Tornikoski & Newbert, 2009).

**Poverty line**

Poverty line is the minimum level of income deemed adequate in a particular country. In practice, the official or common understanding of the poverty line is significantly higher in developed countries than in developing countries. (World Bank, 2015).

**Total Early-stage**

**Entrepreneurial**

**Activity rate (TEA)**

The proportion of adults (18-64) of working age in the process of starting or running a business that is less than 42 months old (Donna, 2014).

**Unemployment rate**

This refers to the share of the labor force that is without work but available for and seeking employment (Ekkehard, Christian, Steven, 2014).

## ACRONYMS AND ABBREVIATIONS

**A** : Agree

**ASDSP**: Agriculture Sector Development Support Programme.

**CA** : California.

**CBS** : Central Bureau of Statistics.

**CBO** : Community Based Organization.

**DA** : Disagree

**Df** : Degree of Freedom

**ECGI** : European Corporate Governance Institute.

**ETLM** : Entrepreneurship, Technology, Leadership and Management.

**FAO** : Food and Agriculture Organization of the United Nations.

**GDP** : Gross Domestic Product

**GEM** : Global Entrepreneurship Monitor.

**JKUAT**: Jomo Kenyatta University of Agriculture and Technology.

**KARI** : Kenya Agricultural Research Institute.

**KIE** : Kenya Industrial Estate.

**KIM** : Kenya Institute of Management.

**KIPPRA**: Kenya Institute for Public Policy Research and Analysis.

**IEA** : Institute of Economic Affairs.

**IMF** : International Monetary Fund.

**ILO** : International Labour Organization.

**MA** : Massachusetts.

**N** : Study sample number

**NACOSTI**: National Commission of Science, Technology and Innovation

**R&D** : Research and Development.

**R.O.K** : Republic of Kenya.

**OECD** : Organization for Economic Co-operation and Development.

**SA** : Strongly agree

**SACCO** : Savings and Credit Cooperative Organization.

**SBE** : Small Business Economy

**SD** : Disagree

**SMEP** : Small and Micro Enterprise Programme.

**SPSS** : Statistical Package for the Social Sciences.

**UD** : Undecided

**UK** : United Kingdom.

**U.o.N** : University of Nairobi.

**TEA** : Total Early-stage Entrepreneurial Activity.

## ABSTRACT

Entrepreneurship is not only found in all fields including the field of smallholder farming but it is also instrumental in stimulation of economic growth through generation of employment and reduction of poverty in a country. While smallholder farming is the dominant economic activity in Kenya, globally it supports one third of humanity. All this notwithstanding, the smallholder farming entrepreneurship phenomena in Kenya is still relatively unexplored and most of the studies to date have been conducted in other countries. Little is, therefore, known about the factors that influence smallholder farming entrepreneurship in Kenya and there is no empirical study that has been conducted on the same in Taita Taveta County. This study, therefore, sought to determine the factors that influence smallholder farming entrepreneurship in Taita Taveta County with specific objectives being to explore the influence of access to finance, formal education, culture and social network on smallholder farming entrepreneurship in the county. Descriptive research design was used to facilitate data collection and analysis in this study. The target population of this study was all the 51587 smallholder farmers in Taita Taveta County. From this population 397 respondents were sampled for study. Purposive and stratified random sampling designs were used to select smallholder farmers to be included in the sample of 397 smallholder farms. Data was collected through questionnaires and interviews. Quantitative data analysis was facilitated through a multivariate regression analysis that was undertaken using the SPSS tool. Through the regression analysis, the sample model was determined. The multivariate regression analysis was used to test the influence of each of the independent variables (access to finance, formal education, entrepreneurial culture and social network) on smallholder farming entrepreneurship in Taita Taveta county. Thematic analysis technique was used to analyze qualitative data obtained in this study. Data was presented using bar graphs, pie charts and frequency tables. The study results indicated that majority of the respondents had attained formal education at least up to secondary school level and most of the respondents were over 40 years of age. The results from the hypotheses testing showed that the independent variables: formal education, entrepreneurial culture and social network had significant influence on smallholder farming entrepreneurship in Taita Taveta county while access to finance had no significant influence on smallholder farming entrepreneurship. In conclusion, other factors other than the ones identified in this study also influence smallholder farming entrepreneurship in Taita Taveta county. It is recommended that, the county government should come up with policies that promote farming entrepreneurship. On the other hand, the financial service providers in the county and in Kenya in general need to come up with financial products that will ensure increased access to finance among smallholder farmers.



## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

With the ever increasing population, the world has to contend with a number of economic challenges key among them being unemployment. Almost 202 million people around the world were unemployed in 2013, an increase of almost 5 million compared with the year before. This shows that employment is not expanding sufficiently fast to keep up with the growing labour force and if appropriate employment creation measures are not put in place, there will be 215 million job seekers by 2018 (Ekkehard, Christian, & Steven, 2014 ). In South Africa unemployment rate among youth aged between fifteen and twenty nine years stood at forty two percent (Magruder, 2012). Gabon on the other hand had a youth unemployment rate of thirty five percent in 2013 while Namibia registered a youth unemployment of thirty four percent in the same year (World Bank, 2015).

In Kenya employment problem is compounded by rapid population growth and a growing youth population estimated at 67 per cent of the adult population, low and un-sustained economic growth. The employment challenge in Kenya is manifested in terms of 12.7 per cent open unemployment rate, 21 per cent underemployment and a working poor estimated at 46 per cent of the employed (KIPPRA, 2013). As Kenya aspires to become a globally competitive country that is expected to offer high quality of life to all her citizens by the year 2030, it is apparent that the attainment of this aspiration hinges on the extent to which the country is able to create and nurture a competitive and adaptive human resource base that is responsive to the rapidly industrializing and globalizing economy (KARI & ASDSP, 2014). The economic, social and political pillars of the Kenya Vision 2030 are anchored on existence of a skilful, productive, competitive and adaptive human resource base. Creation of productive, decent and sustainable employment opportunities is, therefore, at the core of achieving the country's Vision (R.O.K, 2014).

Entrepreneurship has been found to be a catalyst for economic growth and development through job creation, income generation and poverty reduction (Audretsch & Keilbach, 2011). Audretsch and Keilbach (2011), argue that entrepreneurship is the process by which new enterprises are founded and become viable.

In this approach, the most common way of measuring entrepreneurship is to look at new firm formation, that is, entry flows minus exit flows. Indeed, according to the OECD (2009), industrial dynamics (i.e. the entry and exit of firms) would account for about 30-40% of total productivity growth in the OECD countries. This is further supported by IMF (2011), which identified a direct relationship between a country's rate of entrepreneurial activity and its level of economic development. This relationship between a country's rate of entrepreneurial activity and its level of economic development supports the idea that entrepreneurship represents one of the driving forces of economic growth, employment generation and unemployment reduction both in developed and developing countries (Foster, Haltiwanger & Syverson, 2008; Fritsch, 2011).

However, to extend the culture of entrepreneurial thinking and promote entrepreneurship in an economy, it is imperative for the countries of the world to more than ever before focus on promotion of creativity and innovation (or entrepreneurship) in all sectors of their economies (Haugh, 2009). Creativity and innovation propel entrepreneurship in any sector of the economy (Audretsch & Keilbach, 2011). According to Chakravorti (2010), entrepreneurship is the continuing generation of innovation in response to perceived opportunities in the business environment and innovation is thus a tool of entrepreneurship. Since innovation is the process that transforms new ideas into new value, both innovation and entrepreneurship demand creativity (Friday, 2009). An entrepreneurial economy, whether at the national, regional or community level, differs significantly from a non-entrepreneurial economy in many respects, not only by its economic structure and its economic vigorousness, but also by the social vitality and quality of life which it offers with a consequent attractiveness to the people (Bruton, Ahlstrom, & Obloj, 2008). For realization of an entrepreneurial economy Pathak (2008),

observes that policy measures and intervention programmes consistent with the objective of creation of high-income job generating opportunities through entrepreneurship are critical.

The United States of America has long been viewed as being among the world's most entrepreneurial, economies. It is often argued that this economic dynamism has enabled the US economy to adapt to changing economic circumstances and recover from recessions in a robust manner (Cardarelli, Elekdag & Lall, 2009). Among 26 developed economies, the U.S. had the second highest rate of total early-stage entrepreneurial activity (TEA) in 2014 with a minimum of 13% of U.S. adults starting and running new businesses. U.S also registered the world second highest creativity index of 0.950 in 2014 after Australia which had a creativity index of 0.970. This high rate of entrepreneurship registered high levels of innovation and economic growth such that in 2014, 36.7% of U.S entrepreneurs' products or services were innovative and 44.8% expected to grow their businesses by 6 or more employees in the next five years (Donna, 2014).

The country of Singapore is miles ahead of Kenya economically because of consistently embracing the culture of entrepreneurship. After independence in 1965, Singapore introduced an entrepreneurial infrastructure to assist small and medium enterprises (SMEs) to grow and by 2014 Singapore had total early-stage entrepreneurial activity (TEA) rate of 12.7% that was just slightly below that of the United States of America and a high creativity index of about 0.896 while Kenya registered a low total early stage entrepreneurial activity of below 6% and creativity index of 0.417 in 2014 (Mark, 2014). As result of this consistent entrepreneurship Singapore has grown from a GDP per capita of USD 516 at independence (1965) to a GDP per capita of USD 55,180 today and a compounded annual growth of 9.5%. Singapore has also been witnessing a consistent growth in employment. For example, 58.4% of Singapore's population was employed in 2014 compared with 49.5% in 2004 registering one of the highest employment increases in the world courtesy to innovation and entrepreneurial culture among her citizenry (Cripps, 2015). Kenya's GDP per capita at independence was around USD 104 and today

is USD 1,587 and a compounded annual growth of 5.2%. Had Kenya's economic growth been similar to Singapore since independence, her GDP per capita would today be USD 10,690 (KIPPRA, 2013).

For many years, the role of entrepreneurship and innovation has been given little emphasis in agriculture. However, in the last few years, governments have recognized the need for a more entrepreneurial culture in farming as a critical aspect of job creation and income generation in the rural areas (Davidsson, 2008). According to the World Bank (2015), about two thirds of the world population poor are mainly concentrated in rural areas, which are predominantly agriculture-oriented areas. Therefore, in order to eradicate poverty and raise the welfare standards of the population; more focus should be put on entrepreneurship in agriculture and particularly in smallholder farming. This is supported by the fact that there are about 500 million smallholder farms in the developing countries supporting almost 2 billion people – one third of humanity- with about 36 million of them being in the continent of Africa (Christina, 2013; Jaeger, 2010)

In the UK for example, business farming is an important part of the small to medium-sized enterprise (SME) sector, and is currently part of the discussions on small business development and entrepreneurship (McMillan, & Rodrik, 2011) In response to the changing business environment, there is increasing diversity with regard to farms' strategic orientation- where in addition to focusing on conventional primary production, many farms add value to agricultural products by means of processing, direct sales niche products or have diversified their activities in the farm into non-agriculture businesses. These changes bring with them new opportunities for farm business. Entrepreneurship is therefore needed to exploit these opportunities (Bruton, Ahlstrom, & Obloj, 2008). This will in turn create employment in the rural areas and thus contribute towards rural-urban balancing and help to bring about equity in distribution of incomes (Carter, Alsos, Ljunggren, & Welter, 2011).

Effective creation of jobs and poverty reduction in developing countries, where about 80% of rural households are engaged in agriculture, will involve the development of in-country processing and value-adding of agricultural produce and hence the diversification of the rural economy. Experience to date indicates that, by enabling market opportunities for these local resources, significant livelihood options for otherwise marginalized farmers and producers can be facilitated (Binswanger, McCalla, & Patel, 2010). However low entrepreneurship activities still continue to be witnessed in the developing countries as demonstrated by their low creativity index compared to those of the developed countries. For example in 2014 Kenya registered a creativity index of 0.417; Colombia 0.140; Cameron 0.408; Senegal 0.355; Uganda 0.197; Morocco 0.178 and Tanzania 0.125 compared to U.S 0.95; Singapore 0.896 and U.K 0.881. This state of affairs in the developing countries is posing a number of economic challenges among them being increasing poverty and unemployment (Richard, Charlotta, Kevin, Kimberly, Zara, & Michelle, 2014).

In Kenya, the urban population is growing at a rate of 4% per annum (R.O.K, 2014). The growing urban population is characterized by a number of challenges notably poverty and high unemployment. For example, youth unemployment in Kenya is projected to increase from 17.3% in 2013 to 19.2% by 2018. The national unemployment rate stands at 40% and 43% of the population live below the poverty line (IFAD, 2016; IEA, 2016). This state of affairs is even worse in Taita Taveta County whose unemployment rate currently stands at 45%, a rate higher than the national average. Poverty is also a major challenge in the county with the county poverty level standing at 57.2% contributing 1.1% to the national poverty level (KARI & ASDSP, 2014). The county population is projected to increase from 329,383 in 2015 to 345,800 in 2018 (R.O.K, 2014).

Promotion of entrepreneurship in Kenya and more so in agriculture particularly in small scale farming is critical in addressing the menace of poverty and unemployment as 80% of the Kenyan population, just like in the other developing countries, live in the rural areas where small holder farming is the dominant economic activity (KIPPRA, 2013). This is

in keeping with the Kenyan government's banking on innovation and entrepreneurship in agriculture to create 3 million jobs between 2013 and 2017 and to accelerate economic growth to 7% annually (ROK, 2017). Indeed according to Maina, Francis, Walter, Gidraph, and Dalton (2014), adoption of innovative farming practices and entrepreneurship among small scale farming has a huge potential of employment generation and poverty reduction in Kenya as small-scale farmers produce over 70% of maize, 65% of coffee, 50% of tea, 80% of milk, 85% of fish and 70% of beef and beef-related products for the Kenyan and external markets. Smallholder farmers in Kenya also produce 60% of all exported vegetables and fruits.

However the full benefits of smallholder farming entrepreneurship in developing countries like Kenya may take longer as to date, not much is known about rural and smallholder farming entrepreneurship in these countries. Most of the farming entrepreneurship research so far are concentrated in developed countries and mature markets and deal mainly with business activities related to processing and marketing of farm products (U.o.N & ASDSP, 2014; Paula, 2010). Entrepreneurship among low-income people in the developing countries is not well understood posing potential challenges to strengthening entrepreneurial efforts at the local context (Paula, 2010). For instance most of studies done in Kenya on the subject of entrepreneurship on micro, small and medium enterprises have not targeted smallholder farmers. Examples of these studied include; a study by Mwangi and Ngugi (2014), on the influence of Entrepreneurial Orientation on growth of Micro and Small Enterprises in Kenya that targeted 1420 MSEs registered with the ministry of Trade and that of Ngugi (2013), on the factors that influence growth of small and medium enterprises in Kenya.

### **1.1.1 Factors influencing smallholder farming entrepreneurship**

Majority of smallholder farmers in the developing countries are in the pre- entrepreneurial stage and although they may be entrepreneurial in spirit, various factors limit their opportunities to farm as entrepreneurs (Carter, Alsos, Ljunggren & Welter, 2011). Kenya

in particular continues to register low smallholder entrepreneurship as demonstrated in 2014 where the country registered a total early-stage entrepreneurial activity (TEA) of below 6% and creativity index of 0.417. Consequently Kenya's GDP per capita grew from USD 104 at independence in 1963 to USD 1,587 to date and a compounded annual growth of 5.2% (Mark, 2014). This is a very dismal performance when compared to a country like Singapore which because of maintaining a high entrepreneurship level, (a total early-stage entrepreneurial activity (TEA) rate of 12.7 and a creativity index of about 0.896) grew her GDP per capita from USD 516 at independence in 1965 to a GDP per capital of USD 55,180 to date and a compounded annual growth of 9.5% (Cripps, 2015; KIPPRA, 2013).

According to Mudiwa (2017) although entrepreneurship by smallholder farmers unlock market opportunities, ability to access credit by the farmers is key in determining their entrepreneurial orientation in Zimbabwe. In Cuba smallholder farming entrepreneurs innovatively specialize in micro-units of intensive livestock raising and horticultural production where the main limitation is land. The land size factor make the smallholder farming entrepreneurs to engage mainly in specialty production of green vegetables, poultry, pigs, mushrooms, ornamental plants, herbs among others (Thompson, 2009). In Java, Indonesia, education, farm size, and network heterogeneity have a positive influence to entrepreneurial orientation, and somewhat influence innovation capacity of smallholder farmers (Etriya, Victor, Emiel, and Onno, 2012).

In Nigeria, agribusiness enterprises span the entire agricultural production, processing, distribution and consumption spectrum from farm input supplies, food packers, food transporters, and food marketing companies and entrepreneurship has been recognized as one of the driving forces for market competitiveness (Mandam, 2010 ). According to Nwibo, and Okorie (2013) unemployment, profit motive, quest for financial independence, population of the investment area, experience in self-employment, and proximity to market are the major determinants of entrepreneurship in South-East, Nigeria. Further Nwibo, and Okorie (2013) observed that age, educational status,

experience, annual income, household entrepreneurial history, and marital status were the identified entrepreneurs' socioeconomic characteristics that have significant effect on the decision to be an entrepreneur.

According to Mohd, Muhammad, Noorliza, and Anees (2010), education exhibit a significant influence on smallholder farming entrepreneurship in Malaysia because of its role to facilitate knowledge on agribusiness management and marketing. Mohd, Muhammad, Noorliza, and Anees (2010) recon that smallholder farmers in Malaysia mainly engage in cultivation of vegetables, miscellaneous crops, fruits and aquaculture. Subrahmanya, Mathirajan and Krishnaswamy (2010) attribute SME (which include smallholder farming entrepreneurs) entrepreneurship in India to combination of; firm level technological capability owing to internal factors such as technical qualification, education, experience and market pressure due to external factors like customer requirements and demand, and information provided by suppliers of equipment's and materials.

According to Kumar (2008) access to finance, land, labour, information and knowledge among others factors are important in expansion of smallholder farming entrepreneurial activities. For David (2012), successful Smallholder farmer-entrepreneurs need to be technically competent, innovative to plan ahead so that they can steer their farm businesses through the stages of enterprise development – from establishment and survival to rapid growth and maturity. David (2012) further observes that there are many challenges that these smallholder farming entrepreneurs face that include social barriers, economic barriers, regulations, low access to finance and information, and their own managerial capacity to cope with risks associated with seizing entrepreneurial opportunities.

Rudman (2008) notes that smallholder farmer-entrepreneurs operate in is a complex and dynamic environment where they are part of a larger collection of stakeholders that include other farmers, input suppliers, traders, transporters, processors, financial service providers and business service providers among others. These stakeholders need to



interact with each other with mutual respect and trust to make the whole production system profitable. All in all specific studies to determine which of these factors influence entrepreneurship in smallholder farming in specific areas are necessary.

### **1.1.2 Smallholder farming entrepreneurship in Taita Taveta County**

According to County Government of Taita Taveta, (2013), although most of the smallholder farmers engage in diversified farm enterprises such as Tomatoes, bananas, onions, green grams, beans, cabbages and dairy keeping among others, very few smallholder farmers (0.5%) venture in innovative and emerging livestock enterprises such as ostrich farming, crocodile farming, tortoise farming, silkworm farming, snail farming and butterfly farming. County Government of Taita Taveta, (2013) further notes that very few smallholder farmers engage in innovative crop enterprises such as moringa, mushroom, aloe vera and jatropha farming among other crop enterprises. The failure by these smallholder farmers in Taita taveta to engage in innovative and specialty enterprises has made them to miss on the entrepreneurship opportunity of creating niche markets (RoK, 2014). On the other hand, UoN and ASDSP (2014) recons a situation of a limited use of modern technologies among smallholder farmers in Taita Taveta. In this regard UoN and ASDSP (2014) observe that only about 20% of the smallholder farmers that engage in the dairy enterprise keep any of the pure dairy breeds such as ayrshire, friesland and jersey among others while for the smallholder farmers that engage in irrigated farming, only about 8% use innovative technologies like drip irrigation technology. Further UoN and ASDSP (2014) observe that although a number of modern market facilities such as market shades exist in Taita taveta county, not many smallholder farmers sell their products in packaged form and majority of them market their products by displaying them in the open air. For Mwaluko (2012), only about 5% of the smallholder farmers in Taita Taveta county engage in innovative marketing initiatives such as digital

marketing as in most of the trading centres and in major urban towns majority of the smallholder farmers sell their products along the road reserves through agents and brokers.

## **1.2. Statement of the Problem**

Entrepreneurship has been found to be a catalyst for economic growth and development through job creation, income generation and poverty reduction (Audretsch & Keilbach, 2011; Bwisa, 2013). A positive relationship between a country's rate of entrepreneurial activity and its level of economic development supports the idea that entrepreneurship represents one of the driving forces for economic growth, employment generation and poverty reduction both in developed and developing countries (Foster, Haltiwanger & Syverson, 2008; Fritsch, 2011). To extend the culture of entrepreneurial thinking and propel entrepreneurship in any of the sectors in a country, it is imperative to focus on creativity and innovation (Bwisa 2011; Haugh, 2009).

However, recent years have seen increased debate on the increasing economic challenges facing Kenyans and the threat these economic challenges pose to the country's social cohesion, political stability and economic growth. Notable among these economic challenges are, unemployment and poverty. For example, youth unemployment in Kenya increased from 17.1% in 2003 to 17.3% in 2013 and is projected to reach 19.2% by 2018 while half of the country's populations currently live below the poverty line (IFAD, 2016; IEA, 2016). Apparently, Kenya continues to registered low entrepreneurship as demonstrated in 2014 where the country registered a total early-stage entrepreneurial activity (TEA) of below 6% and creativity index of 0.417. Consequently Kenya's GDP per capita grew from USD 104 at independence in 1963 to USD 1,587 to date and a compounded annual growth of 5.2% (Mark, 2014). This is a very dismal performance when compared to a country like Singapore which because of maintaining a high entrepreneurship level, (a total early-stage entrepreneurial activity (TEA) rate of 12.7 and

a creativity index of about 0.896) grew her GDP per capita from USD 516 at independence in 1965 to a GDP per capital of USD 55,180 to date and a compounded annual growth of 9.5%.

Promotion of entrepreneurship in Kenya and more so in small scale farming is critical in addressing the menace of low per capita GDP, poverty and unemployment since 80% of Kenyan populations live in the rural areas where smallholder farming is the dominant economic activity (KIPPRA, 2013). This is in line with Government's pledge to promote innovation and entrepreneurship in Agriculture in order to create three million jobs during the period 2013 to 2017 and to accelerate economic growth to seven per cent annually (R.O.K, 2014). Smallholder farming entrepreneurship is critical in Taita Taveta County where 85% of the county's population live in the rural area and smallholder farming is the main economic activity (R.O.K, 2014; U.o.N & ASDSP, 2014). The county has a population that is projected to increase from 329,383 in 2015 to 345,800 in 2018 and a high unemployment rate of 45%. It is also one of the poorest counties in the country with absolute poverty level of 57.2% and contributes 1.1% to national poverty (KARI & ASDSP, 2014).

Many of the farming entrepreneurship studies so far are concentrated in developed countries and mature markets and focus mainly on processing and marketing of farm products (U.o.N & ASDSP, 2014; Paula, 2010). In Kenya many of the entrepreneurship studies focus on other sectors other than farming like those by Ngugi and Mwangi (2014), on trade, Ngugi (2013), on SMEs that by Kanyari and Namusonge (2013), on youth enterprise fund and that by Mwaluko (2012), on the influence of micro finance institutions on entrepreneurial growth of small scale businesses in Taita Taveta. The few studies on entrepreneurship targeting farmers that have been done in Kenya have been done in other geographical regions and on specific crops or livestock for example, the study by Neyole and Bwisa (2015), on cabbage farming in Trans Nzoia County and the study by Kanyi (2015), on tree farming in Lari District. Therefore, no study has been done on smallholder farming entrepreneurship in Kenya. Despite the fact that smallholder farming

entrepreneurship is an engine for employment generation and poverty reduction (Fritsch, 2011), it has remained unexplored subject in Kenya and indeed in Taita Taveta County where smallholder farming is the main economic activity. It is against this backdrop that the researcher carried out a research to investigate the factors that influence smallholder farming entrepreneurship in Taita Taveta County.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

The general objective of the study was to assess the factors influencing Smallholder Farming Entrepreneurship in Taita Taveta County.

#### **1.3.2 Specific Objectives**

The specific objectives of the study were:

1. To assess the influence of access to finance on Smallholder farming entrepreneurship in Taita Taveta County.
2. To determine the influence of formal education on Smallholder farming entrepreneurship in Taita Taveta County.
3. To establish the influence of entrepreneurial culture on Smallholder farming entrepreneurship in Taita Taveta County.
4. To examine the influence of social network on Smallholder farming entrepreneurship in Taita Taveta County.

### **1.4 Research Questions**

In this study, the researcher sought to answer the following questions:

1. What is the influence of access to finance on Smallholder farming entrepreneurship in Taita Taveta County?
2. Does formal education influence Smallholder farming entrepreneurship in Taita Taveta County?

3. What is the influence of entrepreneurial culture on Smallholder farming entrepreneurship in Taita Taveta County?
4. Does social network influence Smallholder farming entrepreneurship in Taita Taveta County?

### **1.5 Hypotheses**

The study helped to test the following hypotheses:

H<sub>01</sub>: Access to finance has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.

H<sub>02</sub>: Formal education has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.

H<sub>03</sub>: Entrepreneurial culture has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.

H<sub>04</sub>: Social network has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.

### **1.6 Significance of the Study**

The findings of this study will greatly inform the policy makers in the county and in the country in general in formulation of suitable interventions and strategies that enhance competitiveness among smallholder farmers for wealth and employment generation. The smallholder farmers will have an opportunity to use the findings from the study to enhance entrepreneurial activities in their farms to increase the competitiveness of their products in the market place. The findings from this study will also greatly contribute to the existing body of knowledge on the factors influencing smallholder farming entrepreneurship in Taita Taveta County and in Kenya in general. Further, the study will facilitate formulation of general theories on the smallholder farming entrepreneurship phenomena in Taita

Taveta County thereby contributing to making the phenomena more understood in the academia world, the farming community, the policy making institutions and among any other farming entrepreneurship stakeholder. The study will also create an opportunity for other researchers to undertake further studies along this topic to fill in any research gaps that may be left by this study.

### **1.7 Scope of the Study**

The study was limited to the smallholder farmers in Taita Taveta County. Taita Taveta County was purposely chosen because from the reviewed literature, no study on the factors that influence smallholder farming entrepreneurship has been done in this County. This is despite the fact that the county has a very high unemployment rate of 45%, higher than the national average of 43% and is one of the poorest counties in the country with an absolute poverty level of 57.2% contributing 1.1% to the national poverty (KARI & ASDSP, 2014). The focus of the study to smallholder farming entrepreneurship was informed by the fact that 85% of the county's population live in the rural area where smallholder farming is the main economic activity (R.O.K, 2014; U.o.N & ASDSP, 2014), and by the fact that smallholder farming entrepreneurship is a critical catalyst for job creation, income generation and poverty reduction in the county (Audretsch & Keilbach, 2011). In this study the Researcher only focused on the influence of access to finance, formal education, entrepreneurial culture, and social network as studies have shown that these factors have strong influence to farming entrepreneurship (Beckert, 2010; Henrekson & Sanandaji, 2010).

### **1.8 Limitation of the Study**

In this study, a number of questionnaires were administered by the research assistants as not all the smallholder farmers were literate. Although this was important in assisting the illiterate respondents to interpret the questions in the questionnaires correctly, it could have had a biased influence on some of the responses given by the affected smallholder

farmers due to fear of exposure of their information and identity. To mitigate this, the affected smallholder farmers were assured of confidentiality of the information given. The researcher also assured anonymity by not capturing any respondent's identification information in the questionnaires and interview schedules.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1. Introduction**

This chapter consists of a conceptual framework for the study, theoretical review on entrepreneurship, a review of related literature on the influence of access to finance, formal education, entrepreneurial culture and social network on smallholder farming entrepreneurship, summary and critique of the reviewed literature and research gaps.

#### **2.2 Theoretical Framework**

Smallholder farming entrepreneurship is a multi- dimensional concept and can be explained from several perspectives such as; economic, psychological, sociological and anthropological perspectives among other perspectives. In this study, the different perspectives of smallholder farming entrepreneurship are explained through Schumpeter's economic theory, Thomas Cochran's social theory and McClelland's theory of achievement motivation.

##### **2.2.1 Economic Perspective**

Schumpeter's economic theory was chosen to explain the economic perspective of the study. In this theory Schumpeter (1983) advances the view that, an entrepreneur takes calculated economic risks to maximize profit, expands his business activities and to grow his firm while bearing the state of uncertainty caused by the possibility of failure. Thus his assumption that entrepreneurs are not satisfied with simply earning their own living, but are expected to take advantage of favorable economic conditions to grow their enterprises. In this theory Schumpeter (1983) asserts that economic change revolves around innovation, entrepreneurial activities, and market power and seek to prove that innovation-originated market power can provide better results than price competition and



that technological innovation often creates temporary monopoly which is necessary to provide the incentive for firms to develop new products and processes.

The entrepreneur in this theory is attributed to the function of innovating through improving existing goods and services and creating or expanding markets and the theory further advances the view that an economic system is a closed circular flow that is in a state of equilibrium through a continuous reiteration of the flows between buyers and sellers. The disturbance of the circular flow is thus attributed to the entrepreneur, who plays a fundamental role as an innovator (Hebert & Link, 2009). Further, Schumpeter (1983) in this economic theory, recons that entrepreneurship takes place when the entrepreneur creates a new product (that is , a product with which consumers are not yet familiar with or a product of new quality), introduces a new way to make a product, discovers a new market for a product (that is, a market into which the particular product in question has not previously entered whether or not the market existed before), finds a new source of raw material (that is, irrespective of whether this source already exists or whether it has first to be created) or finds a new way of making things or organization. The theory further assumes that entrepreneurs innovate when economic conditions are favorable. These economic conditions include taxation policy; industrial policy, availability of raw materials, access to finance, access to information, access to technology and infrastructure and access to marketing opportunities among others (Landstrom, 2010).

This theory guided the researcher on the choice of independent variables; access to finance and formal education. Access to finance and formal education (this can avail technology and information to individuals) are among the economic factors that can motivate smallholder farmers in Taita Taveta County into entrepreneurship as per the Schumpeter's (1983) economic theory. The theory was also used to guide in determining the indicators of innovations and hence smallholder entrepreneurship in Taita Taveta County.

### **2.2.2 Sociological and Anthropological Perspective**

The sociological and anthropological perspectives of this study was explained through Thomas Cochran social theory. Thomas Cochran social theory start with the premise that fundamental problems of economic development are none economic and emphasizes cultural values, role expectations, and social sanctions as the key elements that determines the supply of entrepreneurs in the society. In this theory Cochran(1960) observes that an entrepreneur is neither a super-normal individual nor a deviant person but represents a society's model personality and that an individual in a society plays a social role partly shaped by the model of personality that comes from the social conditioning of his generation. Cochran (1960) further argues that, the individual's mode of personality is largely molded by the type of child-rearing and schooling practices common in a given culture. These assertions assume that entrepreneurial practice is largely inherited and offspring's of entrepreneurial parents are more likely to be entrepreneurs and be more successful compared to others (Kwabena, 2011). Individuals who grow up in a community that is entrepreneurial are likely to benefit from the entrepreneurial skills, accumulated experiences, existing social networks, better access to advice, credit, established markets and sources of inputs that will make it easier for him or her to start a business and suggests that a strong grounding in business and ownership ethic at an early age is a useful and powerful driving force for children as they choose their future careers (Freytag & Thurik, 2010). Although in any society a few unusual individuals that will always depart from the norm exist, this theory assumes that general invention and innovation will tend to be along lines congenial to the type of social conditioning (Thompson, 2009).

Cochran (1960) social theory further advances the view that societies have clear social expectations through which groups and entrepreneurial role are closely defined. This framework of an entrepreneurial role is defined by the personality of the individual, the role expectations of the social groups/society with power to sanction deviations from expected behavior and the operational needs of the function to be performed. Thus the

individual's performance as an entrepreneur will be influenced by his own attitude toward his venture, the role expectations held by sanctioning groups and the operational requirements of his undertaking. The former two elements are determined largely by the society's values, while the last element will be influenced by changes over time in such exogenous variables as population, technology, consumer demand or merely cumulative institutional drift. The Cochran (1960) social theory guided in the determination of the indicators of entrepreneurial culture and social networks and how culture and social networks influences smallholder entrepreneurship, hence its relevance in this study.

### **2.2.3 Psychological Perspective**

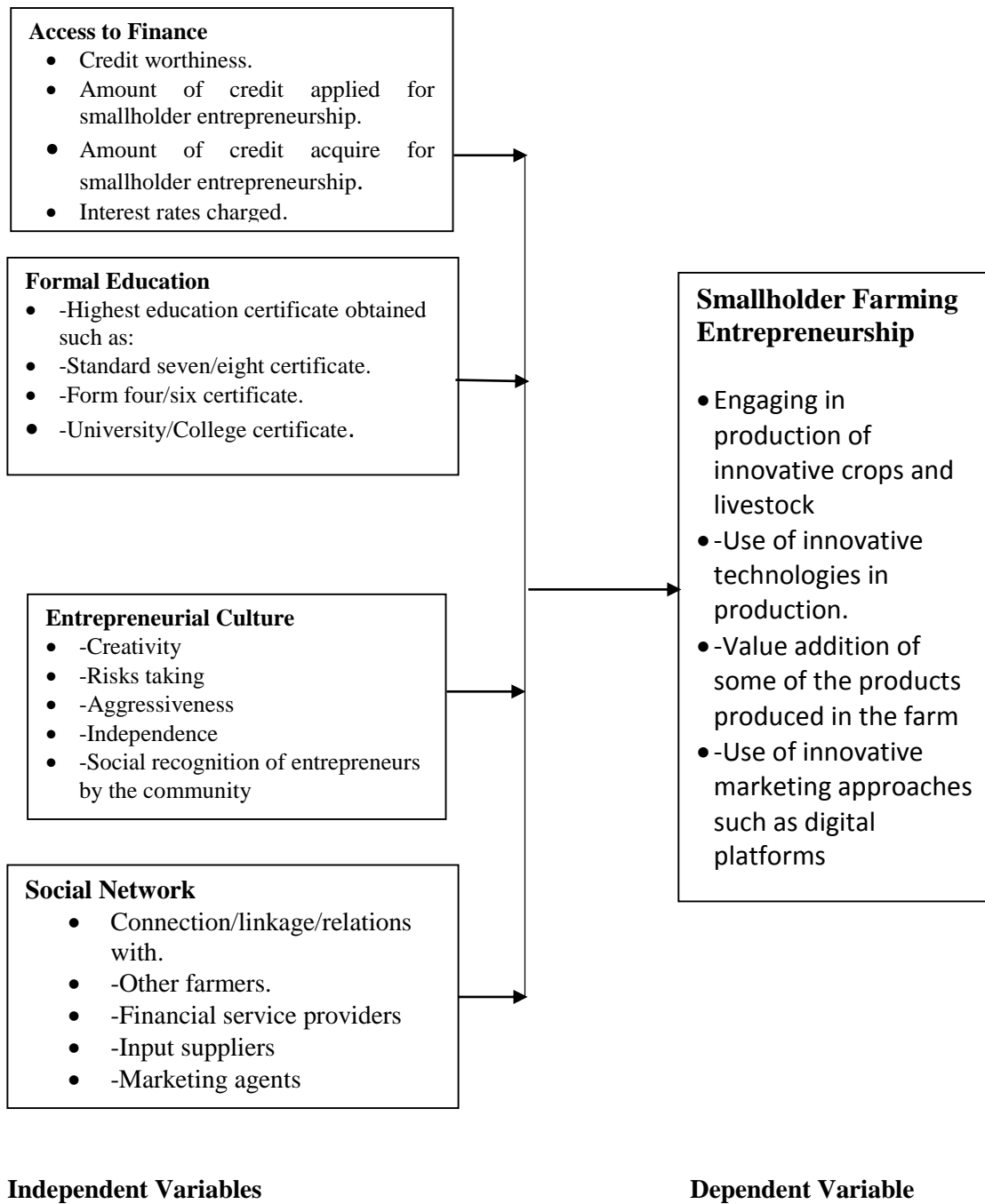
The McClelland's achievement motivation theory was used to explain the psychological perspective of this study. In this theory McClelland (1971) holds the view that regardless of one's gender, culture, or age people have three motives for accomplishing things identified as: a need for achievement, a need for affiliation, and a need for power and that people will have different characteristics depending on their dominant motivator. According to McClelland, these motivators are learned (which is why this theory is sometimes called the learned needs theory). The McClelland (1971) theory of achievement motivation emphasizes the relationship of achievement motivation or need for achievement (symbolically written as n Ach) to entrepreneurship and puts forward the claim that a relatively greater amount of entrepreneurship is found in a society with a relatively high need for achievement. In this achievement motivation theory, individuals with the need to achieve attitude develop personality stable enduring qualities or potentials such as self-confidence, enthusiasm, inner control, aspiration to independence, self-efficiency, creativity/innovative character, target orientation, inclination towards risk-taking and tolerance to uncertainties among others that can naturally make an individual an entrepreneur (Thompson, 2009).

Borrowing from this theory smallholder farming entrepreneurs have a higher internal locus of control than other smallholder farming population and that risk taking and

innovativeness, need for achievement, and tolerance for ambiguity has positive and significant influence on their entrepreneurial inclination (Gartner & Bellamy, 2009). The theory further contents that entrepreneurship actions of the smallholder farmers are primarily determined by their personality. The McClelland (1971) theory of achievement motivation bears relevance to this study as it guided in determining the indicators of smallholder entrepreneurship as the researcher sought to establish the extent to which the smallholder farmers in Taita Taveta exhibit risk taking and aspiration for self-independence among other entrepreneurial traits that are developed through the need to achieve attitude.

### **2.3 Conceptual Framework**

Conceptual framework is the researcher's understanding of how the particular variables in his study connect with each other. The conceptual framework identifies the variables required in the research investigation and acts as the researcher's map in pursuing the investigation (Gorard, 2013). According to Mugenda (2011) conceptual framework is a research tool that assists a researcher to develop awareness and understanding of the situation under scrutiny and to communicate the same. The conceptual framework for this study was informed by the reviewed literature on economic, sociological, anthropological and psychological theories of entrepreneurship. The study was based on the following conceptual framework as in Fig. 2.1.



**Figure 2.1: Conceptual Framework**

The independent variables in this conceptual framework were access to finance; formal education, entrepreneurial culture and social network which influence the dependent variable, which was smallholder farming entrepreneurship. Under smallholder farming entrepreneurship the aspects that were considered were diversification in the farm, use of new farm technologies such as new crop cultivars, engagement of smallholder farmers on specialty production such as herbs production, provision of services to other farmers, farm tourism, and innovative market practices such as contract farming (Sharma, Tiwari, & Sharma, 2010). Financial access was considered through the aspects of credit worthiness on the part of the smallholder farmers, amount of credit applied and amount of credit acquired by the smallholder farmers in the last three years. The other aspects that were considered under access to finance included availability of financial service providers and the interest rates charged by various financial service providers on credit advanced to the smallholder farmers (Chidzero, Ellis & Kumar, 2009).

.For the independent variable formal education, education certificates acquired at various levels of education were considered. These certificates included; Standard seven/eight certificate, form four/six certificate and university/College certificate (Block & Sander, 2010). On entrepreneurial culture, the community cultural perception were considered on the aspects of creativity, risk taking behaviors, Aggressive behaviours, independence (self-employment) and the social place of entrepreneurs in the community (Mbam & Nwibo, 2013). Finally, social network were considered through the aspects of connections/linkages/ relations of the smallholder farmers with other entrepreneurs/ farmers, credit service providers such as banks, business development services, input suppliers like farm machinery dealers and marketing agents among others (Gartner & Bellamy, 2009).

### **2.3.1 Access to Finance**

Entrepreneurial start -ups such as smallholder farming entrepreneurial start-ups are those newly founded ventures that endeavor to enter or sometimes create a market with

innovative products. However, in their early stage of development the entrepreneurs of these start-ups are often hampered by a scarcity of critical resource, of which financial capital and management capacity are the most predominant. There are five widely recognized pre-conditions that must be in existence for entrepreneurs to succeed; a favorable market structure, access to financial capital, high quality human and social capital, a culture that is tolerant to failure and strong property rights when starting, exiting or selling business ( He, 2009 ). According to Gasparini, Gutierrez, Porto, Tamola and Tornarolli (2009), access to finance broadly means access to financial products such as loans and services such as insurance and equity products at a reasonable cost. Given the widely recognized link between access to finance, economic growth, income generation and poverty reduction; countries strive to work towards achievement of the United Nations sustainable development goal of universal financial access by the year 2030.

It is observed that, financing is an important input in every entrepreneurial venture as it is critical for the smooth running of day to day operations, asset acquisition, expert recruitment and the development of marketing and distribution channels of the Venture (Botazzi, DaRin, & Hellmann, 2010). For most entrepreneurs, the single biggest concern is where to obtain capital (Barona & Gomez, 2009). This is because outside debt and equity financing for small firms has long been known to be expensive and difficult to obtain. In addition, banks and investors have generally been skeptical of the success potential of small firms due to information asymmetries, which in turn result to high costs in terms of interest, ownership and control (Ebben, 2008). Sources of finance can be both formal and informal and can range from banks, near banks, non-banks, community organizations to friends and family (Barth, Caprio, & Levine, 2009). Chidzero, Ellis and Kumar ( 2009) observe that additional to the common brick & mortar bank branches' arrangement that are not only costly to set up and hard to manage, financial services can be accessed through branchless banking that include banking agents and use of technology such as mobile phones. M-Pesa in Kenya, Wizzit in South Africa, and G-Cash in

Philippines are some successful examples of branchless banking that have increased financial access for the unbanked.

The operating environment for Smallholder Farming entrepreneurs is constantly changing, and as these entrepreneurs adapt to the vagaries of the market, changing consumer habits and enhanced environmental regulations, they require substantial tangible resources, such as physical or financial capital to run their enterprises successfully in the dynamic setting (Kerr & Nanda, 2008). All this notwithstanding, access to capital always remains a challenge to the small holder farming entrepreneurs. This is due to the fact that they live off the land and are not quite represented in the mainstream financial system (De mel, 2008). However, there are ways to calculate both the value and risk to allow for financial support to trickle down and make a difference at the grassroots among the smallholder entrepreneurs such as use of insurance products (Paravisini, 2008). However, this trickle down is inhibited by lack of competition in concentrated markets that reduces incentive for the financial institutions to downscale and to explore these new market segments. Furthermore, the lack of legal framework to support alternative product development such as leasing also impacts product innovation beyond loans against traditional collateral (Chidzero, Ellis & Kumar, 2009).

In Nigeria, lack of motivation, lack of finance, inadequate management skills, poor infrastructure, and taxation deter both youths and farming households from venturing into the entrepreneurship world (Mandama, 2010). Justifying inadequate credit facilities as a constraint to entrepreneurial development, it can be inferred that low productivity in agriculture has led to limited market surplus which prevents the prospective entrepreneurs in agriculture from having enough cash to procure farm inputs and services (Barona & Gomez, 2009). Again, the formal financial intermediaries are not helping issues and most do refuse farmers from sourcing loans from their institutions due to lack of acceptable collateral, hence, branding the farmers as non-credit worthy (Gartner & Bellamy, 2009). Beck, Demirguc and Martinez (2010) observe that there has been difficulties in data collection and measurement that makes it hard to say with any certainty who has access



to finance and who does not. The data on access to date remains thin and tentative. Available estimates, however, show that a large number of low income people in developing countries are currently financially excluded and that there is a significant difference between developing and developed countries' financial access levels.

Neyole and Bwisa (2015) in their study on factors influencing entrepreneurial behavior among small scale farmers in Trans Nzoia county that targeted cabbage farmers found out that access to credit is a major barrier to small and micro-enterprises growth and development while a study by Mwaluko (2012) on influence of micro-finance institutions on entrepreneurial growth of small scale businesses in Taita Taveta County in Kenya established that availability and accessibility to micro finance institutions are vital in entrepreneurial growth in general. According to Taita Taveta County agribusiness survey by KARI and ASDSP (2014), Taita Taveta is experiencing low growth in micro, small and medium enterprises in the farming sector despite the availability of several financial service providers in the county that include the main stream banks and a host of micro finance institutions such as SMEP, Yehu, KIE, Lashtag Ark SACCO, Platinum, Vision fund, Kenya women finance trust and Qwetu SACCO among others. A research gap on whether the various financial products provided by these financial service providers are accessible to the smallholder farming entrepreneurs therefore exists.

### **2.3.2 Formal Education**

Demands from the globalization phenomena have shown that entrepreneurs (including smallholder farming entrepreneurs) must have multiple skills if they are to be agents of national development. The development of these skills is assisted by the processes of formal education, training and development in the society. These skills can be put in three broad categories: management development perspective skills; interpersonal skills and cross-sectional skills which consist of innovation/creativity, planning, organizing and Kaizen skills (Rodney, 2009). Other skills that are necessary for entrepreneurship development that are assisted by formal education include cultural adaptation skills and

skills for managing knowledge for organization's success among others (Rodney, 2009). Entrepreneurial Start-up rates improve when emerging entrepreneurs are better educated and supported by the local community (Naude, Gries, wood, & Meintijies, 2008). Supporting this assertion, it can thus be concluded that, formal education impacts positively on entrepreneurship (Ogundele, 2010).

Experience and knowledge are identified as success factors for entrepreneurship development and whereas knowledge can be formal or informal it can be acquired through education among other sources (Hussain & Windsoperger, 2010). However, the focus on the level of education is not meant to deny the importance of other factors that contribute to entrepreneurial success, such as, the nature of the entrepreneur; his character traits such as independence, persistence, innovativeness, risk taking ability, among others (Chen, Zou, & Wang , 2009). With the aim of quantifying the effect of formal education on entrepreneurs' success, Block, and Sander (2010) estimated the returns to formal education for entrepreneurs and found that entrepreneurs who invested more time and money in knowledge acquisition were more successful.

In a similar study, Van der Sluis, Van Praag, and Vijverberg (2009) found that an additional year of education increased entrepreneurial profits by 5.5% in developing countries and 6.1% in developed countries; which implies that returns to education were slightly higher in developed countries. Interestingly, respondents with a Bachelor's degree and without any business degree view themselves as entrepreneurs as compared to persons with Master's degree or business degree (World Bank. 2015). On the part of smallholder farming entrepreneurs, it is noted that their participation in entrepreneurial activities particularly in agro-processing is likely to be influenced and affected by their cognitive abilities, including exogenous factors at the disposal of individual smallholder farmers (GEM, 2011). Cognitive abilities include the farmer's background, education levels, prior business and farming experience while exogenous factors include institutional support and socio-economic dynamics (Thompson, 2009).

Smallholder farming entrepreneurship span the entire agricultural production, processing, distribution and consumption spectrum from farm input supplies through farms themselves and also include food processors, food packers, food transporters, and food marketing companies (Okpara, 2010) A study involving three hundred and sixty smallholder entrepreneurs in Southeast Nigeria concludes that educational status and source of investment capital among other factors have positive effect on determinants of farming entrepreneurship and that the educational attainment of an entrepreneur is related to a decision to be an entrepreneur (Nwibo & Okorie, 2013). On the review of the impact of formal education on entrepreneurship and entrepreneurial performance, three key generalizations are observed. First, the evidence suggesting a positive link between education and entrepreneurial performance is robust. Second, although the link between education and selection into entrepreneurship is somewhat ambiguous, evidence suggests that when necessity entrepreneurship and opportunity entrepreneurship are considered separately, and when country or regional difference is considered, the link is less ambiguous. Finally, the relationship between education and selection into entrepreneurship is not linear in nature. The review concluded that the highest levels of entrepreneurship are linked to individual with at least some colleague education (Sánchez, 2010).

Education therefore seems important for stimulating entrepreneurship because of several reasons: first, education provides individuals with a sense of autonomy, independence and self-confidence, second, education makes people aware of alternative career choices, third, education broadens the horizons of individuals, thereby making people better equipped to perceive opportunities, and finally, education provides knowledge that can be used by individuals to develop new entrepreneurial opportunities (Bakotic & Kruzic, 2010 ). Thus, Entrepreneurs are not born rather they become through education and the experience in their lives (Sattar, 2012). Meanwhile, Knowledge, is comprised as much of explicit knowledge as of implicit knowledge (Potter, 2010). Explicit knowledge is the result of the accumulation of general knowledge through the education system, whereas

implicit knowledge is acquired through experience (Henrekson, & Sanandaji, 2010). Although both kinds of knowledge have a positive influence on entrepreneurship (Ucbasaran, Westhead, & Wright, 2009), work experience, part of implicit knowledge, has a weak relationship to entrepreneurial activity (Friday, 2009). A study by Kanyari, and Namusonge (2013) on factors that influence the Kenyan youth entrepreneurs towards the youth enterprise development fund in Gatundu south district in Kenya observed that provision of entrepreneurship education to sensitize and inculcate entrepreneurial culture among the young people is crucial to identifying emerging business talents.

### **2.3.3 Entrepreneurial Culture**

Culture can be viewed as a collective programming of the mind which distinguishes the members of one group or category of people from another and there are national and regional cultural groupings that affect the behaviour of societies and organizations. Culture encompasses the values, norms, interpretations and modes of behaviour that characterize societies or other social groups (Stefanovic, Prokic, & Rankovic, 2010). In addition to a national level, which is commonly understood under the term culture, there is also a regional level and ethnical level and any human being belongs to different social groups at any of the levels. According to Thompson (2009), culture is learnt consciously and unconsciously and is different from human nature or individual personality. Cultural features are transmitted socially, from generation to generation and not through genetic heritage. That is why culture cannot be changed in the short term, as it possesses a long-term character (Hofstede & Minkov, 2010). The culture viewpoint clearly shows that, culture is always a collective phenomenon which is shared, with human living in the same social environment or belonging to the same group (Freitag & Thurik, 2010).

The influence of culture on entrepreneurship was first emphasized by Max Weber at the beginning of twentieth century. As Weber famously argued, Protestantism encouraged a culture that emphasized individualism, achievement motivation, legitimizing of entrepreneurial vocations, rationality, asceticism, and self-reliance. This ethic was a

fundamental element of the spirit of modern capitalism (Tung, Walls, & Frese, 2010). The existence of national and regional cultural grouping makes the rate of entrepreneurship to differ widely across regions and over time (Ansell, 2011). Whereas some regions score consistently high on various indicators of entrepreneurial activity (such as several Anglo-Saxon countries); other regions remain in a backward position (Freytag & Thurik 2010). Entrepreneurship theorists as well as empirical work suggest a role for culture in explaining the cross-region entrepreneurship differences (Freytag & Thurik, 2010). This points to the fact that certain societal values may be conducive to new firm formation and/or economic dynamism in general (Acs & Szerb 2010).

This view is supported by Henrekson and Sanandaji (2010) who observe that studies conducted at the individual level shows that there is a link between individual values and beliefs, on the one hand, and individual entrepreneurial behaviour on the other, hence it is plausible that cultural differences between countries or regions have a determining effect and influences on a variety of individual behaviours, including the decision to become self-employed rather than to work for others. Noticeable difference in the level of entrepreneurship across regions and ethnic groups has increased empirical interest on the topic of the influence of culture on entrepreneurship. However, a limitation of studies on the relationship between cultural values and entrepreneurship still exist (Acs & Szerb 2010; Autio, Pathak & Wennberg 2010; Freytag & Thurik 2010; Henrekson & Sanandaji 2010; Stephan & Uhlaner 2010)

On the smallholder farming front, it is necessary to develop an entrepreneurial culture among farmers in line with Mbam and Nwibo (2013) who observe that cultural values of an agri-entrepreneur/farmer significantly affect entrepreneurial activities in the farm. Mbam and Nwibo (2013) further observe that, culture stimulates people of the same community to initiate behaviours, which may not have the same extent in other communities and that new venture creation or self-employment initiative is one of these behaviours that fluctuate through communities due to the differences in cultural values and beliefs. For Levent (2008), an entrepreneur can be described as an independent and a

risk-taker who aligns people and necessary resources in order to set up new business ventures. To achieve this, it is paramount that the community in which the entrepreneur evolves has cultural values, which recognize the legitimacy of the entrepreneurial function as well as the entrepreneurial role.

Thompson (2009) relate creativity to entrepreneurship, using the Bohemian Index – a measure of the proportion of artistically creative people in a community. The culture of creativity, self-criticism, leadership and risk taking are therefore important for successful smallholder farming entrepreneurship (Sander, 2010). Farming entrepreneurship should therefore be focused and riveted on the breeding of Farming entrepreneurs, who are not just farmers, but are also thinkers, risk takers and business people (Ahmad & Hoffman, 2008). To make this approach successful, all the aspects such as cultural, social and political situations must be addressed in a holistic way at the regional level ((Nwibo & Okorie, 2013)). Culture determines the extent to which entrepreneurial opportunities are actually recognized and grasped (Sander, 2010). This observation is true to the extent that, the disposition of an entrepreneur can be profoundly influenced by their surrounding cultures and that some cultures appear to be more naturally inclined towards enterprise than others (Stephan & Uhlaner 2010).

In regards to an entrepreneur, culture can indicate how they are likely to act and react in a given situation (Henrekson & Sanandaji, 2010). This can be in response to shared sets of beliefs and values, codes of behaviour, and set minimum standards of behavior (Sriram, Mersha, & Herron, 2009). According to Stephan and Uhlaner (2010), the social legitimating of entrepreneurship focuses on the impact of social norms and institutions on society-at-large. This view by Stephan and Uhlaner (2010) claims that greater rates of entrepreneurship are found in societies where the entrepreneur is endowed with higher social status and as more individuals value entrepreneurship as a result of the higher social status conferred on entrepreneurs in those societies, the demand for and supply of entrepreneurs increase.

The way people (or more specifically in this case, Smallholder farming entrepreneurs) in different areas perceive and interpret their environment varies along four dimensions; power distance, uncertainty avoidance, individualism and masculinity (Mbam & Nwibo, 2013). In line with the four outlined cultural dimensions, entrepreneurship is more likely to emerge from societies that exhibit a culture dominated by high aggressive behaviours, low uncertainty avoidance, low power distance and high individualism tendencies (Bwisa, 2013). Culture is important in entrepreneurship as it determines the attitudes of individuals towards the initiation of entrepreneurship (Pathak & Wennberg 2010). An enterprising culture is a commitment of the individual to the continuing pursuit of opportunities and developing an entrepreneurial endeavour to its growth potentials for the purpose of creating wealth for the individual and adding value to society (Stephan & Uhlaner, 2010).

#### **2.3.4 Social Network**

Smallholder farming entrepreneurs are part of the larger collection of individuals such as suppliers of farm inputs, transporters, marketers, processors and financial service providers among others whose network is critical for entrepreneurship development. Entrepreneur's network therefore, is the sum total of his or her relationships that involves all the connections with the other people. It is the process of enlarging the entrepreneur's circle of trust through a negotiated process (Gartner & Bellamy, 2009). Network is a patterned relationship between actors such as individuals, groups or organizations (Tornikoski & Newbert, 2009). Through networks entrepreneurs make use of resources that are external to the venture thus achieving the objective of gaining a competitive advantage by extending resource availability beyond the assets under their direct control (Freytag & Thurik, 2010). It is rightfully argued that, successful entrepreneurial environments are characterized by thriving supportive networks that provide the institutional fabric; linking individual entrepreneurs to organized sources of learning and resources (McDonald, 2008)). Hence, individual social networking and inter-organizational strategic network activities are important for a successful start-up and for

an ongoing competitive advantage, as they facilitate resource acquisition and the identification of opportunities (Beckert, 2010).

The individual social networking construct represents entrepreneurs engaging in networking activities to enhance his/her entrepreneurial venture (Lesibana, 2014). These entrepreneurial networking activities may occur with other entrepreneurs' contacts like other entrepreneurs, business development services, financial service providers, marketing agents and input suppliers among others (Beckert, 2010). The aim of those networking activities is to provide assistance to entrepreneurs in the form of expert opinions, counseling, shared experiences, role models, information resources and motivation (Schallenkamp & Smith, 2008). Inter-organizational networking consists of formal and/or informal collaborative networking activities among entrepreneurial advocates at the public, private, and civic levels that may facilitate the entrepreneurial process from an idea generating stage, to a development stage, and later to a strategic positioning one (Chen, Zou, & Wang, 2009).

The principle strength of the entrepreneurial network is its bridging function that involves; first, creation of new patterns of economic activity, assisting innovation, bridging supply and demand and helping integrate fields of activity that have previously been separated. Second, networks assist the entrepreneur in his/her efforts to scan the environment for opportunities that may be exploited in the future. Third, networks provide a type of governance for entrepreneurial behavior. Fourth, interaction within the network assists the entrepreneur in building his/her own fund of social capital within the market place specifically, they posit that networks provide a bridge between the social and economic dimensions of human conduct (Moraima, Jose, & Kalle, 2013). It is in record that the larger the network, the better the access to outside resources—implying ultimate success of the firm might hinge on the size of the informal network (Christina, 2013). A significant resource sought by entrepreneurs from other members of the network in the start-up phase of business development, is capital (Zafir & Fazilah, 2011)



As entrepreneurship is embedded in networks, opening entrepreneurs to social networks may advance or constrain links to better resources and information, as well as offer faster responses to opportunities and challenges (McMillan, & Rodrik, 2011). The ability to utilize entrepreneurial network has been identified as one among the key skills needed by a person wishing to succeed in entrepreneurial activities (Christina, 2013). Meanwhile, Kamisan and Kamal (2009) study on the influence of personal and socio-economic factors that motivate women in entrepreneurship in Malaysia found that social networking benefits entrepreneurship. These results are consistent with previous studies on entrepreneurship by Zafir and Fazilah (2011), which placed social networking among the crucial factors in influencing entrepreneurship.

### **2.3.5 Smallholder Farming Entrepreneurship**

Entrepreneurship is a dynamic force in the development of small business in general and its relevance in smallholder farming is associated with recognition and exploitation of new farm business opportunities. Smallholder farming entrepreneurship means a change of quality of management in the process of farming. It involves diversifying away from the production of crops and livestock as raw commodities to transformation further up the supply chain (Sharma, Tiwari, & Sharma, 2010). Smallholder farming entrepreneurship include production of specialty food products for niche markets; the provision of services to other farmers and the use of agricultural assets such as the farm house and the farm animals to attract paying visitors (Ucbasaran, Westhead & Wright, 2009).

Entrepreneurs as innovators are always looking for better and more efficient and profitable ways to do thing (Kiende, Mukulu, & Odhiambo, 2019). Smallholder farmer-entrepreneur needs to be innovative to survive strong competition from large and developed farms and the rapidly changing environment (Jaeger, 2010). For Ahmad and Hoffman (2008), smallholder farmers should generate value, through creation, expansion or innovation of economic activity by identification and exploitation of new agricultural products, agro-processes or markets. Kari and Jarkko (2008) concur with this observation by pointing out

that smallholder farmer needs innovative market practices such as contract farming arrangements with large farms, marketing/processing agents or marketing cooperatives for a successful market-oriented farming.

Smallholder farming entrepreneurship is critical in the face of the developing trend of free market economy that is intensifying business competition for the agricultural commodities in the local, regional and the global market arena as it equates to all the activities, which help the farmers to adjust to the emerging competition in the business environment (Carter, Alsos, Ljunggren, & Welter, 2011; Kari & Jarkko, 2008). It helps smallholder farmers to develop competitive enhancing entrepreneurial traits such as adaptability, flexibility, speed, aggressiveness and innovativeness. Small-scale farmers in the developed economies show a remarkable ability to adapt. They look for better ways to organize their farms. They try new crop cultivars, better animals, and alternative technologies to increase productivity, diversify production to reduce risk and to increase profits. They have become more market oriented and have learned to take calculated risks to open or create new markets for their product (Grilo, & Thurik, 2008). Rudmann (2008) acknowledges that the entrepreneurial environment smallholder farmer-entrepreneurs operate in is a complex and dynamic one where the farmers are part of a larger collection of stakeholders that include other farmers, input suppliers, traders, transporters, processors, financial service providers and business service providers among others. Each one of these stakeholders need to be entrepreneurial as they all have a role in production and moving the farm products through to the market. They also need to respect each other and work together to make the whole production system profitable.

It is worth to note that, farmers and indeed large scale farmers are traditionally entrepreneurial and their farms can be characterized as businesses (Grande & Madsen, 2011). To support this observation, Etriya, Victor, Emiel, and Onno (2012) assert that smallholder Farmer-entrepreneurs should also see their farms as a business and therefore as a means of earning profits. They also need to be passionate about their farm business and be willing to take calculated risks to make their farms profitable and to grow their

farm businesses. However, majority of smallholder farmers in the developing countries are in the pre- entrepreneurial stage and although they may be entrepreneurial in spirit, they have limited opportunities to farm as entrepreneurs. They therefore need to be facilitated to change their resource mix and overcome access and risk issues so as to expand their entrepreneurial activities (Carter, Alsos, Ljunggren & Welter, 2011).

Access to finance, land, labour, information and knowledge among others factors are important in expansion of smallholder farming entrepreneurial activities (Kumar, 2008). For David (2012), successful Smallholder farmer-entrepreneurs are technically competent, innovative and plan ahead so they can steer their farm businesses through the stages of enterprise development – from establishment and survival to rapid growth and maturity. David (2012) further observes that there are many challenges that these farmers face that include social barriers, economic barriers, regulations, access to finance and information, and their own managerial capacity to cope with risks associated with seizing entrepreneurial opportunities. Specific studies to determine which of these factors limit entrepreneurship in smallholder farming in specific areas are necessary. The majority of studies on entrepreneurship and innovation focus on large farms. Not many studies are conducted on smallholder farmers' entrepreneurial orientation (Etriya, Victor, Emiel, & Onno, 2012).

Smallholder farming entrepreneurs can be categorized into economical entrepreneurs and social entrepreneurs. The economical entrepreneurs aim to try to keep monetary farming costs as low as possible while social entrepreneurs have more interest in nature and landscape conservation. Organic farming and minimum tillage are some examples of entrepreneurial practices by the smallholder farming social entrepreneurs (Kari & Jarkko, 2008). In Cuba farming entrepreneurs innovatively specialize in micro-units of intensive livestock raising and horticultural production, sometimes without the need of cultivated land (as in rooftop, hydroponic and container production). Perishable and “special niche” products dominate in this entrepreneurship practice, especially green vegetables, dairy products, poultry, pigs, mushrooms, ornamental plants, herbs and fish (Jaeger, 2010). The

smallholder farmers in Cuba also undertake entrepreneurship through intensification of urban and peri-urban horticultural systems, which can be described as maximizing output from minimal space as well as application of bio-intensive gardening and permaculture practices (David, 2012). In Java, Indonesia, a study by Etriya, Victor, Emiel, and Onno (2012) that involved 282 smallholder vegetable farmers, indicated that, education, farm size, and network heterogeneity have a positive influence to entrepreneurial orientation, and somewhat influence innovation capacity of smallholder farmers.

In Nigeria, agribusiness enterprises span the entire agricultural production, processing, distribution and consumption spectrum from farm input supplies, food packers, food transporters, and food marketing companies and entrepreneurship has been recognized as one of the driving forces for market competitiveness (Mandam, 2010). A study by Nwibo, and Okorie (2013) on the determinants of entrepreneurship among agribusiness investors in South-East, Nigeria which involved 360 agribusiness entrepreneurs selected through a purposive and multistage sampling techniques identified unemployment, profit motive, quest for financial independence, population of the investment area, experience in self-employment, and proximity to market as the major determinants of entrepreneurship in South-East, Nigeria. The study also observed that age, educational status, experience, annual income, household entrepreneurial history, and marital status were the identified entrepreneurs' socioeconomic characteristics that have significant effect on the decision to be an entrepreneur.

## **2.4 Empirical Review**

This section dealt with the review of literature of the previous studies that relate to hypothesis and variables of this study (Kothari & Garg, 2014). The reviewed literature was done as per each study objective.

#### **2.4.1 Influence of formal education on smallholder farming entrepreneurship**

According to a study by Mohd, Muhammad, Noorliza , and Anees (2010) in Malaysia that used face-to-face interviews and questionnaires to gather information from a total of 400 respondents from smallholder farmers who cultivated vegetables, miscellaneous crops, fruits and aquaculture to determine the factors motivating smallholder farmers engagement in farming entrepreneurial activities, education exhibited a significant influence on smallholder farming entrepreneurship as demonstrated by its role to facilitate knowledge on agribusiness management and marketing. This Mohd, Muhammad, Noorliza and Anees (2010) study covered nine states in Peninsular Malaysia, namely, Perlis, Kedah, Perak, Selangor, Penang, Johor, Kelantan, Terengganu.

In Java, Indonesia, a study by Etriya, Victor, Emiel, and Onno (2012) that involved 282 smallholder vegetable farmers, indicated that, education has a positive influence to entrepreneurial orientation, and influenced innovation capacity of smallholder farmers. In this study, information from the smallholder farmers was obtained through semi-structured questionnaires and interviews to measure the dimensions of entrepreneurial orientation in terms of innovativeness, proactiveness, and risk taking. The study hypothesis testing was facilitated through the factor analysis approach using SPSS.

A research on importance of innovations and entrepreneurship for SME growth, evidence from India by Subrahmanya, Mathirajan and Krishnaswamy (2010) looked at the ability of SMEs to undertake entrepreneurship. The study then found out that entrepreneurship lends competitive edge to farms/ firms, industries and ultimately, economies. From the Subrahmanya, Mathirajan and Krishnaswamy (2010) study, most of the entrepreneurial SMEs attributed the origin of their entrepreneurship to combination of; firm level technological capability owing to internal factors such as technical qualification, education, experience and market pressure due to external factors like customer requirements and demand, and information provided by suppliers of equipment's and materials.

#### **2.4.2 Influence of access to finance on smallholder farming entrepreneurship**

A study by Tullock (2010) that aimed at uncovering the capital constraints of emerging agribusinesses in south Africa found out that barriers to accessing finance are largely due to lack of collateral, poor credit record, inadequate business skills and communication problems between financiers and entrepreneurs. On the issue of what role, the finance-enabling environment should play in reducing the barriers to finance, findings from Tullock (2010) research suggested more risk taking by financiers and relaxing the stringent credit assessment criteria. In this study, Tullock (2010) adopted descriptive research design where 20 randomly sampled start-up entrepreneurs in the emerging agribusiness industry and five experts from the financial institutions were interviewed and the quantified data was analyzed through multiple regression. The researcher used the data analysis spiral for the qualitative data.

Zahurul (2013) study to assess the factors that affect the success of entrepreneurs of small and medium sized enterprises of Bangladesh indicated access to finance as a major factor that positively influenced the success of the entrepreneurs. The Zahurul (2013) study used survey approach to collect data from eighty entrepreneurs from the southern region of Bangladesh that were selected through random sampling technique. In this Zahurul (2013) study, descriptive statistics, correlation and regression analyses were used to facilitate the data analysis. A descriptive survey by Kumar, (2008) involving a sample of 340 smallholder farmers in Western Nigeria established that access to finance, land and labour among others factors are important in expansion of smallholder farming entrepreneurial activities.

A study by Samuel, Mukulu, and Odhiambo (2019) to determine the influence of access to finance on performance of coffee smallholders in Murang'a County, Kenya, established that access to finance had a positive and significant influence on the performance of coffee smallholder agribusinesses. The study which targeted a population of 146,105 coffee smallholders of Murang'a county concluded that since majority of the coffee smallholder

agribusinesses in Kenya do not access finance they have opted for own savings as a means of financing their micro and small agribusiness enterprises and recommended that owners of the micro and small agribusinesses in Kenya should be trained by stakeholders such as local NGO, county governments, national governments and financial institutions on the importance of seeking external funds to finance their agribusinesses.

Further, a study by Mudiwa (2017) to investigate how collective entrepreneurship by smallholder farmers in Chipinge district in Zimbabwe unlock market opportunities established that the farmers ability to access credit were key in determining their entrepreneurial orientation. The Mudiwa (2017) study consisted of 62 smallholder farmers with thirty-one of the smallholder farmers purposively sampled from a census of five beef farmer groups in lower Chipinge while the other half were randomly selected from the same area.

#### **2.4.3 Influence of entrepreneurial culture on smallholder farming entrepreneurship**

A study by Amarendra (2013) that was based on the farm level data collected from 290 sampled smallholder farmers representing two contrasting agro-climatic regions of Uttar Pradesh established that entrepreneurial culture (curiosity, determination, persistence, visionary, hardworking, honesty and integrity) was a critical factor in smallholder farming entrepreneurship in Uttar Pradesh. The Amarendra (2013) study that aimed to address the issue of entrepreneurship among farming community in Uttar Pradesh in India categorized the smallholder farmers into: 210 traditional crops farmers that were practicing old farming practices and 80 entrepreneurial farmers who were using new farming technologies and practices. A study by Nwibo, and Okorie (2013) on the determinants of entrepreneurship among agribusiness investors in South-East, Nigeria which involved 360 agribusiness entrepreneurs selected through a purposive and multistage sampling techniques identified household entrepreneurial history/culture, and marital status among other factors as the major determinants of smallholder farmer decision to be an entrepreneur.

Further, a study by Mudiwa (2017) that consisted of 62 smallholder farmers with thirty-one of the smallholder farmers purposively sampled from a census of five beef farmer groups in lower Chipinge while the other half were randomly selected from the same area to investigate how collective entrepreneurship by smallholder farmers in Chipinge district in Zimbabwe unlocks market opportunities also found out that the majority of smallholder farmers (74 percent) operating in groups exhibited medium level of overall entrepreneurial behavior; while most of the farmers operating outside groups (77 percent) demonstrated low level of overall entrepreneurial behavior. The Mudiwa (2017) study adopted a descriptive research design in data collection and analysis.

#### **2.4.4 Influence of Social network on Smallholder farming entrepreneurship**

A study by Lesibana (2014) in south Africa that involved 120 smallholder farming entrepreneurs to establish their participation in entrepreneurship and agro-processing activities in South Africa found out that the relationship between social networks and participation in agro-processing activities is positive and significant and that transaction costs had an enhancing moderating effect on the relationship. The Lesibana (2014) study adopted a survey approach where structured questionnaire was administered to smallholder farming entrepreneurs at farmer gatherings to collect data for statistical analysis through multiple regression facilitated by social package for social scientist (SPSS) version 21 software.

Another Study by McDonald (2008) on factors impacting entrepreneurship activity in Western Canadian food production farms asserts that access to credit; labour availability and the network of a farm are some of the factors that influence entrepreneurship activities of a farm. The study further found out that the attributes of a farm, the competitive conditions a farm faces and the characteristics of the region where the farm is located also influence the entrepreneurship decisions in the farm. According to the McDonald (2008) study, access to a large population and household amenities, such as skilled labour and business services increases the probability of a farm to undertake entrepreneurial



activities. Further, the study by McDonald (2008) established that the farms that had access to knowledge spillover from other farms and industries had a greater probability of introducing innovation.

On the other hand, Babu, Abdullahi, and Abubakar (2010) study on strengthening entrepreneurial capacity of Nigerian smallholder farming established the need for improved social networks to strengthen the entrepreneurial capacity of the Nigerian agricultural industry. The Babu, Abdullahi, and Abubakar (2010) study adopted a descriptive design where the researchers conducted a survey among 43 organizations and 366 smallholder farmers. From the research on importance of innovations and entrepreneurship for SME growth-evidence from India by Subrahmanya, Mathirajan and Krishnaswamy (2010) that looked at the ability of SMEs to undertake entrepreneurship established that innovation and entrepreneurship among SMEs in India is enhanced through internal factors and external factors like information on customer requirements and demand obtained through linkages to suppliers of equipment's and materials, business service providers and other SMEs among other linkages.

## **2.5 Critique of the Existing Literature**

From most of the reviewed literature, it was clear that education had a positive impact on entrepreneurship. However, as Rodney (2009) notes a positive link between education and entrepreneurial performance as robust, the same study also makes an observation that the link between education and selection into entrepreneurship is somewhat ambiguous. Further, the assertion by Sander (2010) that respondents with a Bachelor's degree and without any business degree view themselves as entrepreneurs as compared to persons with Master's degree or business degree, bring out an interesting observation that may border on contradiction. The observation by Ucbasaran, Westhead, and Wright (2009) that implicit knowledge that is acquired through experience has a weak relationship to entrepreneurial activity may require more studies to verify. From most of the reviewed literature, network has a positive influence on farming entrepreneurship as successful

entrepreneurial environments are characterized by thriving supportive networks that provide the institutional fabric; linking individual entrepreneurs to organized sources of learning and resources (Beckert, 2010). However, the argument advanced by McDonald (2008) that as entrepreneurship is embedded in networks, opening entrepreneurs to social networks may advance or constrain links to better resources, brings in some contradictions that the reviewed literature leaves unresolved.

The reviewed literature on farming entrepreneurship has focused more on large farms in developed countries on the areas of processing and trading of farm products. Not much in the reviewed literature is on entrepreneurship on primary production (farming). However, the reviewed literature has sufficient representative studies on farming entrepreneurship from African countries like Nigeria and other developing countries like Indonesia. From the reviewed literature, it is clear and appreciated that other exogenous factors other than the ones identified in this study affect entrepreneurship/smallholder farming entrepreneurship such as; demography, politics, geography and economics (Nwibo & Okorie, 2013). To support this assertion, the focus on the level of education in this study is not meant to deny the importance of other factors that contribute to entrepreneurial success, such as, the nature of the entrepreneur; his character traits such as independence, persistence, innovativeness, risk taking ability, among others.

On the other hand, the reviewed literature identified a number of theories namely Schumpeter's economic theory, Thomas Cochran social theory and McClelland's theory of achievement motivation in which the study is successfully anchored. These theories to a great extent assisted in bringing a better understanding of the role of education, access to finance, culture and networking in fostering entrepreneurship. All in all, the reviewed literature has helped to deepen the understanding of the smallholder farming entrepreneurship phenomena.

## **2.6 Research Gaps**

From the reviewed literature was established that most of the studies on factors influencing farming entrepreneurship are from developed countries such as UK, (McMillan, & Rodrik, 2011), Singapore and US, (Donna, 2014), and the studies focus on large farms and mainly on processing and marketing of farm products (U.o.N & ASDSP, 2014; Paula, 2010). Therefore, there was need for more research on farming entrepreneurship and specifically on smallholder farming entrepreneurship in Africa and in Kenya. Indeed, David (2012) observed that there are many challenges that farming entrepreneurs face that include social barriers, economic barriers, regulations, access to finance and information, and their own managerial capacity to cope with risks associated with seizing entrepreneurial opportunities. Specific studies to determine which of these factors limit entrepreneurship in smallholder farming in specific areas were necessary. Further, a limitation of studies on the relationship between cultural values and entrepreneurship still existed (Acs & Szerb 2010; Autio, Pathak & Wennberg 2010; Freytag & Thurik 2010; Henrekson & Sanandaji 2010; Stephan & Uhlaner 2010). Generally, the review showed that not many studies had been conducted on smallholder farmers' entrepreneurial orientation (Etriya, Victor, Emiel, & Onno, 2012).

Most of the studies that had been done on entrepreneurship in Kenya focused on other sectors of the economy other than farming such as the studies by Ngugi and Mwangi (2014) on trade, Ngugi (2013) on SMEs, Kanyari and Namusonge (2013) on youth development fund and Mwaluko (2012) on the influence of micro finance institutions on entrepreneurial growth of small scale businesses in Taita Taveta. The few studies done on farming entrepreneurship had been done in other geographical regions other than Taita Taveta County and focused on specific crop/livestock like the studies by Neyole and Bwisa (2015) on cabbage farming in Trans Nzoia County and Kanyi (2015) on tree farming in Lari District. There was therefore need for studies that specifically investigate factors affecting smallholder farming entrepreneurship in Kenya such as the current one

that was done in Taita Taveta County since no similar research had been conducted in that county yet smallholder farming is the main economic activity in the county.

## **2.7 Summary of the Reviewed literature**

On the dependent variable smallholder farming entrepreneurship, literature reviewed include research works by Etriya, Victor, Emie and Onno (2012); Carter, Alsos, Ljunggren and Welter (2011); Sharma, Tiwari and Sharma (2010) and Gou, et al. (2007) among others with the conclusion that farm entrepreneurship equates to all the activities which help farmers to adjust to a free market economy and that development of smallholder farming entrepreneurship means a change of quality of management in the process of farming and pursuance of innovative farming practices.

On access to finance the reviewed literature showed that financing was an important input in every entrepreneurial venture as it is critical for the smooth running of day to day operations, asset acquisition, expert recruitment and the development of marketing and distribution channels of the Venture (He, 2009; Kerr & Nanda, 2008). On the independent variable formal education, it was generally observed that smallholder farming entrepreneurs must have multiple skills if they are to be agents of national development in the current globalization and that the development of these skills is assisted by the processes of formal education, training and development (Rodney, 2009). The reviewed literature also observed culture as a set of beliefs and values, codes of behaviour, and a set of minimum standards of behavior and that entrepreneurship was more likely to emerge from societies that exhibit a culture dominated by high aggressive behaviours, creative and risk taking behavior, people who value working for themselves as well as a culture that accord entrepreneurs high social status(Uhlaner, 2010) As regards networking, the brief was that successful entrepreneurial environments are characterized by thriving supportive networks that provide the institutional fabric; linking individual entrepreneurs to organized sources of learning and resources that are important for a successful start-up and for an ongoing competitive advantage.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

This chapter discusses the research design, target population, sample and sampling techniques, data collection instruments, data collection procedure, piloting of the instruments and data processing and analysis.

#### **3.2. Research Design**

Research design refers to the overall strategy that a researcher uses to integrate the different components of the study in a coherent and logical way, thereby, ensuring the research problem is addressed logically and as unambiguously as possible. It constitutes the blueprint for the collection, measurement, and analysis of data (Vogt, Dianna, & Lynne, 2012). On his part, Kothari and Garg (2014) describes a research design as all the procedures selected by a researcher for studying a particular set of questions or hypothesis and stresses that a research design is a programme to guide the researcher in collecting, analyzing and interpreting observed factors. In this study, the researcher adopted a descriptive research design to determine the factors that influence smallholder farming entrepreneurship in Taita Taveta County.

According to Gorard (2013) descriptive design is used to gather data from a large population with the intention of describing the existing situation. The design helps to provide answers to the questions of who, what, when, where, and how associated with the research problem and is used to obtain information concerning the current status of the phenomena and to describe what exists with respect to variables or conditions in a situation (Nachmias & Nachimias, 2008). For Kothari and Garg (2014), descriptive design is the most appropriate design for social sciences as it enables the researcher to collect in-depth information, including personalized experiences concerning the issues

under investigation. Mugenda (2011) observes that descriptive design allows the researcher to study variables as they exist. Since this was a social science study focusing on a population of 51,587 smallholder farmers in the entire Taita Taveta County, descriptive, survey research design was the most appropriate. Finally, Kothari and Garg (2014) conclude that a descriptive design allows the researcher to gather, summarize, present and interpret information for the purpose of clarification, which is what the researcher intended to do in this study.

### **3.3 Research philosophy**

Research philosophy refers to a system of beliefs and assumptions about the development of knowledge. These assumptions inevitably shape how one understands their research questions, the methods they use and how they interpret their findings (Guttek, 2014). These include assumptions about human knowledge (epistemological assumptions), about the realities one encounters in a research (ontological assumptions) and the extent and ways one's own values influence their research process (axiological assumptions). It also includes Pragmatism research philosophy which accepts concepts to be relevant only if they support action. These philosophical approaches enable one to decide which approach should be adopted by the researcher and why (Saunders, Lewis, & Thornhill, 2009). This study adopted Pragmatism research philosophy. Pragmatism asserts that concepts are only relevant where they support action (Kelemen & Rumens 2009). Pragmatics recognize that there are many different ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities (Saunders, Lewis, & Thornhill, 2012) . Pragmatism research philosophy can integrate more than one research approaches and research strategies within the same study. Moreover, studies with pragmatism research philosophy can integrate the use of multiple research methods such as qualitative, quantitative and action research methods. Pragmatists use whatever combination of methods necessary to find answers to research questions. Additionally, pragmatists do not have to use multiple methods; rather they use method or combination of methods that advances a specific research in the best possible

manner (Saunders, Lewis, & Thornhill, 2012). In this study the researcher combined both, positivist and interpretivism positions within the scope of a single research, viewing both of them as continuum rather than contradictions thus Pragmatic research philosophy. In positivism, research strategy is approached on the basis of data collection and hypothesis development. These hypotheses are tested and the results are confirmed through further research (Ansell, 2011). Another feature of this philosophy is that the positivist researcher follows highly structured methodology in order to facilitate the hypothesis (Weber, 2013)). Furthermore, positivism works on quantifiable observations and accordingly statistical analysis is obtained which was the case in this study. Interpretivism on the other hand is based on understanding human nature and their varying role as social actors (Ralston, 2013). It interprets the social roles of other individuals in accordance with our own set of meanings/perspectives. Interpretivists use methods like, interview, observation and analysis of existing texts. A qualitative approach is applied when interacting with individuals in order to collaboratively construct a meaningful reality (Rowlands, 2009). The researcher collected both qualitative and quantitative data, using a variety of data collection tools and approaches, tested various hypotheses and undertook a number of statistical tests thus the pragmatic philosophy of research.

### **3.4 Target population**

A population is a group of individuals, objects or items from which samples are taken for measurements (Mugenda, 2011). A target population on the other hand consists of all members of a real or hypothetical set of subjects, people or events in which a researcher wishes to generalize the results of a study (Kothari & Garg, 2014). In this study, the researcher targeted all smallholder farmers in Taita Taveta County. The smallholder farmers in this county were grouped into five homogenous categories namely; smallholder dairy farmers, smallholder banana farmers, smallholder onion/tomato farmers, smallholder vegetable farmers and smallholder crop drought resistant/local livestock farmers. The number of smallholder farmers per category is tabulated in Table 3.1.

**Table 3.1: Target Population**

Category/ Strata county	Total number in the
Smallholder Dairy farmers	13,691
Smallholder Banana farmers	14,013
Smallholder Onion/Tomato farmers	2,831
Smallholder Vegetable farmers	5,113
Smallholder Drought resistant crops /local livestock farmers	15,939
<b>TOTAL</b>	<b>51,587</b>

**Source: Taita Taveta County Agricultural Office (December 2017)**

The smallholder farm owners and not the farm workers were targeted because they are the decision makers on the entrepreneurial activities to be undertaken in the farm. The entrepreneurial decisions made by the farm owners are the ones that can be influenced by their level of formal education, their social networks as well as their cultural inclination. Further, it is the responsibility of the farm owners to organize for the financing of all the farming activities.

### **3.5 Sample and Sampling Technique**

A sample is a part of a large population, which is thought to be representative of the larger population. Sampling is a process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of characteristics in the entire group (Creswell, 2012). Sampling in this study was necessary to minimize costs and time of the research (Gorard, 2013).



The Yamane's formula for categorical data was used to determine the sample size (Odhiambo, Mwita, Kihoro, Mwalili, Waititu, Orwa, Mung'atu, & Mugo, 2010):

$$n = \frac{N}{1 + N(\delta)^2}$$

Where:

N is the target population,

n is the desired sample size and

$\delta$  is the critical value of the confidence level (0.05).

Using the formula and given a target population (N) of 51587 respondents, a sample of 397 respondents was drawn as follows

$$N = \frac{51587}{1 + 51587(0.05)^2}$$

$$= 397$$

The number of smallholder farmers in each category/strata was then proportionately computed as here below (Kothari, 2006);

Smallholder Dairy farmers:  $(13,691 \div 51,587) \times 397 = 105$

Smallholder Banana farmers:  $(14,013 \div 51,587) \times 397 = 108$

Smallholder Onion/Tomato farmers:  $(2831 \div 51,587) \times 397 = 22$

Smallholder Vegetable farmers:  $(5113 \div 51,587) \times 397 = 39$

Smallholder Drought Resistant Crops/local livestock farmers:

$(15,939 \div 51,587) \times 397 = 123$

**Table 3.2: Sample Size**

Category/Strata	Total number	Sample size
Smallholder Dairy farmers	13,691	105
Smallholder Banana farmers	14,013	108
Smallholder Onion/Tomato farmers	2,831	22
Smallholder Vegetable farmers	5,113	39
Smallholder Drought resistant crops / Local livestock farmers	15,939	123
<b>TOTAL</b>	<b>51,587</b>	<b>397</b>

The researcher used purposive sampling technique to select the model smallholder farmer from each of the five categories for inclusion in the sample of each particular category. The purposive selection of the model farmer from each of the identified smallholder farmer category is informed by the fact that model farmers are vital source of useful farming information. This is because they are normally very informed as their farms are used as technology demonstration centers by extension and development agents. They are also very receptive to new farming technologies (KARI & ASDSP, 2014). The researcher then used stratified random sampling to select the rest of the smallholder farmers/respondents to be included in the sample for each category/strata. Particularly the researcher used the lottery method to choose the smallholder farmers from smallholder dairy farmers', smallholder banana farmers', smallholder onion/tomato farmers', smallholder vegetable farmers' and smallholder drought resistant crop /local livestock farmers' categories.

### **3.6 Data Collection Instruments**

The Researcher used questionnaires and interview to facilitate gathering of information from the selected respondents. A questionnaire is a series of questions on a topic about which respondents' opinions are sought. This is corroborated by Gorard (2013) and Mugenda (2011), who assert that a questionnaire is a document that asks the same questions to all the individuals in the sample. The researcher used questionnaires on respondents because it was economical to administer to a large number of respondents in terms of time and cost like it was in the case of this study whose sample size of 397 respondents was fairly large (Creswell, 2008). The use of questionnaire in data collection also ensured anonymity hence respondents were able to respond genuinely without fear of identification. Finally, in a questionnaire, the questions are on paper and are standardized hence there was no opportunity for the researcher to be biased (Kothari and Garg, 2014).

The research used both self-administered and enumerator administered questionnaires since not all smallholder farmers were literate. The questionnaire consisted of a section on demographic data of the respondents and a set of items in line with the research objectives. A five- point Likert scale anchored by strongly agree, agree, undecided, disagree and strongly disagree were applied to measure the factors that influence smallholder farming entrepreneurship in Taita Taveta county (Mugenda, 2011). The likert scale was used because it is relatively easy to construct, it facilitated quantifications of the responses, and enabled ranking of items thus tendencies were identified. In a likert scale, the respondents were able to respond to most of the statements in the instrument (Kothari & Garg, 2014).

The researcher also interviewed the respondents to get more in-depth information on various aspects of the variables (Mugenda, 2011). Interview consist of a set of questions that an interviewer asks research respondents and makes it possible to obtain the required data to meet the specific objectives of the study (Gorard, 2013). In-depth interviews

helped to discover underlying needs, motives, feelings and desires of the respondents. Through the interview, the researcher was able to get clarifications on issues that would probably not have been clear if questionnaires were the only tool used in collecting the information (Nachmias & Nachmias, 2008).

### **3.7 Data Collection Procedure**

Data collection is the means by which information is obtained from the selected subjects of an investigation. To facilitate data collection in this study, a letter of introduction was obtained from the chairperson ETLM department in JKUAT. On the strength of the introduction letter from JKUAT and the data collection authorization letter from the National Commission of Science, Technology and Innovation (NACOSTI) the researcher obtained a letter from Taita Taveta county Director of Agriculture, introducing him to the sub-county Directors who facilitated him to collect the data from the respondents. The researcher identified six persons from the department of agriculture in Taita Taveta County to assist him in the data collection. The identified data collection assistants were familiarized with the research instruments. Data collection then commenced with the entire data collection team handling one sub-county at a time until all the sampled farmers in each of the four sub-counties were covered.

### **3.8 Piloting of the Research Instruments**

Piloting of the research instruments means administering the instruments to a small representative sample identical to but not from the sample being studied. Piloting of research instruments is important in determining the validity and reliability of the selected research instruments. Pilot-testing tool was used to assess the average time that was required to administer the instruments (Mugenda, 2011). In this study, the research instruments were pilot tested on 40 smallholder farmers. These comprised of 11 smallholder dairy farmers, 11 smallholder banana farmers, 2 smallholder onion/tomato farmers, 4 smallholder vegetable farmers and 12 smallholder crop drought resistant/local

livestock farmers. The 40 smallholder farmers chosen for pilot testing was 10% of the sample size that is generally recommended in social research (Mugenda, 2011).

### **3.8.1 Reliability**

Reliability of a measurement is the degree to which a particular measuring procedure gives equivalent results over a number of repeated trials (Gorard, 2013). In this study, reliability of the research instruments was assessed through use of Cronbach's Alpha/ coefficient of internal consistency which is computed as follows:  $\text{Cronbach's Alpha} = \frac{Nr}{(1+r(N-1))}$ , where  $r$  = the mean inter-item correlation and  $N$  = number of items in the scale. This is a technique of estimating reliability that does not require either splitting of a scale or the subjects retaking the test for a given construct hence eliminating the challenges inherent in split-half and the test-retest techniques (Mugenda, 2011). In this technique, the more the number of items in a scale, the higher the reliability as long as the added items do not reduce the average inter-item reliability (KIM, 2009; Mugenda, 2011).

Cronbach's alpha coefficient ranges between 0 and 1. The closer the Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. George and Mallery (2003) provide the following rules of thumb; Cronbach's Alpha >0.9 is excellent, Cronbach's Alpha >0.8 is good, Cronbach's Alpha >0.7 is acceptable, Cronbach's Alpha > 0.6 is questionable, Cronbach's Alpha >0.5 is Poor and Cronbach's Alpha <0.5 is unacceptable. However, Dominguez, (2014) assert that an alpha of 0.8 and above is reasonable. In this study 40 smallholder farmers comprising of 11 smallholder dairy farmers, 11 smallholder banana farmers, 2 smallholder onion/tomato farmers, 4 smallholder vegetable farmers and 12 smallholder crop drought resistant/local livestock farmers were used in the pilot test to establish the reliability of the data collection tools. The 40 respondents were not included in the study sample. Through the use of SPSS, the results of the pilot test were as shown in Table 3.3 below.

**Table 3.3: Cronbach's Alpha Analysis for the Pilot instruments**

Scale	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Remarks
Smallholder Farming Entrepreneurship	16	0.800	0.801	Acceptable
Access to finance	12	0.778	0.777	Acceptable
Formal education	10	0.731	0.726	Acceptable
Entrepreneurial culture	9	0.746	0.741	Acceptable
Social Network	13	0.763	0.755	Acceptable

Table 3.3 above shows that the Cronbach's alpha values for, the independent variables; Access to finance, Formal Education, Entrepreneurial Culture, and Social Network were all above 0.7 while that of the dependent variable Smallholder Farming Entrepreneurship was 0.8. These values were all acceptable according to (Dominguez, 2014). This meant that the data collection instruments could reliability be used to collect data for the study.

### **3.8.2 Validity**

Validity is the degree to which a research instrument measures what it purports to measure and consequently permits appropriate interpretation of the scores. Validity refers to the accuracy, truthfulness and meaningfulness of inferences that are based on the data obtained from the use of a tool or a scale for each construct or variable in the study (Nachmias & Nachmias, 2008; Mugenda, 2011). To ensure content validity the researcher used a broad sample of content rather than a narrow one, emphasized on important material and wrote questions to measure the appropriate skill. The supervisors who are experts in the field of study went through the instrument to check the content coverage and clarity of the questions on the issues to be investigated.

### 3.9 Data Processing and Analysis

Data analysis is categorizing, manipulating and summarizing of data in order to obtain answers to research questions. Interpretation is the process of making inferences and drawing conclusions concerning the meaning and implications of a research investigation. The researcher used the SPSS program to analyze the quantitative data collected. The SPSS program was appropriate for social sciences for it enabled the researcher to recode variables, to deal with missing values, to sample, to weight and select cases and to compute new variables and effect permanent or temporary transformations (Kothari & Garg, 2014; Gorard, 2013). Using the SPSS tool, the researcher did a multivariate regression analysis to determine the coefficients of the multiple linear regression model to establish the sample regression model:  $Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$

Where,

$Y_i$  represent the dependent variables; smallholder farming entrepreneurship,

$\beta_0, \beta_1, \beta_2, \beta_3$  and  $\beta_4$  represent the coefficients of the model,

$X_1$  represents access to finance,

$X_2$  represents formal education,

$X_3$  represents entrepreneurial culture and

$X_4$  represents social network and

$e$  represents the error term.

In order to interpret and make inferences from the data obtained from the study the researcher did a number of tests as discussed below:

### 3.10 Diagnostic Tests

The researcher undertook a number of diagnostic tests to establish whether using the collected data, the sample regression model obeyed the assumptions of: reliability, normality, heteroscedasticity, multicollineality and linearity. To test on the regression model's reliability assumption, Cronbach's alpha values for the independent variables; access to finance, formal education, entrepreneurial culture, and social network and the dependent variable smallholder farming entrepreneurship were used as provided by Dominguez, (2014) who observe that the closer the Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale and the higher the reliability of the regression model. Dominguez (2014) further provide the following rules of thumb; Cronbach's Alpha  $>0.9$  is excellent, Cronbach's Alpha  $>0.8$  is good, Cronbach's Alpha  $>0.7$  is acceptable, Cronbach's Alpha  $>0.6$  is questionable, Cronbach's Alpha  $>0.5$  is Poor and Cronbach's Alpha  $<0.5$  is unacceptable.

Further, the researcher used the skewness values of the study variables computed through SPSS to test the normality of the sample regression model as provided by Gorard (2013) where skewness values of between -0.5 and 0.5 indicate that the data used in the regression model obey the assumption of normal distribution. To test whether the model obeyed the assumption of homoscedasticity and hence an indication of existence of equal variance in the sample data used in the study, the researcher used levene statistics test as provided by Stevens (2009). According to Stevens (2009), a regression model would obey the homoscedasticity assumption if the p-values of the levene statistics of the study variables at 0.05 level of significant are less than 0.05.

To test the assumption of multicollineality of the sample regression model, the researcher used variance inflation factors (VIF) as provided by shieh (2010) who observes that for non-existence of multicollinearity among the independent variables of a study, VIF values need to be greater or equal to 1. Further, Sheih (2010) observes that VIF values that exceed 10 are often regarded as indicating multicollinearity and that VIF values of 2.5 may be a



cause for concern. On the test of linearity assumption, the researcher used the Pearson partial correlation( $r$ ) coefficients as provided by Dominguez (2014) who recons that for a regression model to obey a linearity assumption, Pearson partial correlation( $r$ ) coefficient between the study dependent variable and each of the independent variables should be between -1 and 1. Dominguez (2014) further observes that for a weak linearity (positive or negative) between the dependent variable and any of the independent variables of the study,  $r$  would be close to 0 while a case of strong linearity (positive or negative),  $r$  would be close to 1 or -1 and a case of no linearity between the dependent variable and any of the independent variables of the study,  $r$  would be 0.

### **3.11 Hypotheses Testing**

Standard normal distribution test (Z-test) was used to test the statistical significance of each of the independent variable in the sample regression model determined above (Nachmias & Nachmias, 2008). Through a multivariate regression analysis done by use of SPSS tool, coefficients for each of the independent variable in the model and the corresponding z scores were obtained at 5% level of significance, with the critical value( $p$ )=0.05. From the sample model determined If  $\beta_1$ , would be less than 0.05 then access to finance would be statistically significant in this model and the null hypothesis that access to finance does not significantly influence smallholder entrepreneurship in Taita Taveta would be rejected otherwise the hypothesis would be accepted. If  $\beta_2$ , would be less than 0.05 then the variable formal education would be statistically significant in this model and the null hypothesis that formal education does not significantly influence smallholder entrepreneurship in Taita Taveta would be rejected otherwise the hypothesis would be accepted.

Still on the hypothesis testing, if  $\beta_3$  would be less than 0.05, then the variable Entrepreneurial culture would be statistically significant in this model and the null hypothesis that, there is no significant relationship between entrepreneurial culture and smallholder farming entrepreneurship in Taita Taveta county would be rejected otherwise

the hypothesis would be accepted and finally if  $\beta_4$  would be less than 0.05, variable social network would be deemed to be statistically significant in the sample model and the null hypothesis that there is no significant relationship between social network and smallholder farming entrepreneurship in Taita Taveta county would be rejected, otherwise the hypothesis would be accepted (Kothari & Garg, 2014).

### **3.12 Analysis of Variance (ANOVA) Test**

Through carrying out a multivariate regression analysis using SPSS, the researcher was able to obtain F value for the full model as well as the critical F value of the same at 5% level of significance. The F values obtained were used to further test the statistical significance of the model. If the F value of the full model was less than the F critical value at 5% level of significance, it was concluded that the model was statistically significant and if F value was more than the F critical value at 5% level of significance, then the conclusion was that the model was not statistically significant (Nachmias & Nachmias, 2008).

### **3.13 Analysis of qualitative data**

Thematic analysis method was used to analyze the qualitative data that was collected through the interview and the open ended questions in the questionnaire. Thematic analysis method involved pinpointing, examining, and recording patterns (or themes) within data (Kothari & Garg, 2014). This view is shared by Guest (2012) who observes that, the purpose of thematic analysis is to identify patterns of meaning across a data set that provides answers to the research questions being addressed. The patterns in the collected qualitative data was identified through a rigorous process that involved familiarization with the data, generating codes, searching for themes among codes, reviewing themes and interpretations of the developed themes (Mugenda, 2011). Thematic analysis method is theoretically flexible and can therefore be used within different frameworks, to answer quite different types of research questions such as questions related

to people's experiences, or people's views and perceptions (Saldana, 2009), hence its choice for qualitative data analysis in this study. The data was then presented using tables, bar graphs, and pie charts as was appropriate.

### **3.14 Measurement of Variables**

Smallholder farming Entrepreneurship which is the ability by the farmer entrepreneur to recognize and exploit new farm business opportunities to make profit while assuming all the accompanying risks (Ahmad & Hoffman, 2008) can be realized when the farmers undertake; innovative market practices such as contract farming arrangements with large farms and other marketing agents, diversification by introducing in their farms new crop cultivars, new and better animals and value addition of some of the crop or livestock products produced in the farm (He, 2009). Smallholder farming entrepreneurship can also be realized when a smallholder farmer introduces in the farm a niche market product (specialty product) such as mushroom, herbs and ornamental plants among others. The farmer can use the innovative crops and animals introduced in the farm to attract paying visitors who would visit the farm to learn, thus an innovative farm activity (Gasparini, Gutierrez, Porto, Tamola & Tornarolli, 2009). All these entrepreneurial activities help the farmer to reduce risks and increase farm profit.

According to Mandama (2010), access to finance is one of the factors that influence entrepreneurship. financing is an important input in every entrepreneurial venture as it is critical for the smooth running of day to day operations, asset acquisition, expert recruitment and the development of marketing and distribution channels of the venture (Barth, Caprio, & Levine, 2009). On access to finance the researcher considered the aspect of credit worthiness among the smallholder farmers. The farmers who had collaterals that are acceptable to the financial service providers were deemed to be credit worthy and therefore had access to finance as per credit worthiness. The amount of the credit applied in relation to the amount of credit acquired by the farmer was used as an indicator to access to finance in this study. Cases of more amount of credit applied being more than the

amount of credit acquired was a pointer to a situation of low credit access. The other aspect on access to finance that were considered was the general level of interest rate charged by the financial service providers when they advance credit to the farmers. Cases of prohibitive high interest on credit implied low access to finance and vice versa. As noted by Thompson (2009), farmers' ability to perceive and successfully exploit farm business opportunities like in agro-processing and specialty crop and animal production is likely to be influenced and affected by their cognitive abilities. These cognitive abilities include the farmer's formal education level among others. In determining the influence of formal education to smallholder entrepreneurship in Taita Taveta, the researcher considered the formal education attainment of individual targeted farmers in terms of the certificates they possess. Various formal education attainments were demonstrated through standard eight/seven certificate, form four certificate, College certificate and university certificate among others.

For the independent variable Entrepreneurial culture, the researcher considered the extent of social recognition of entrepreneurs in Taita Taveta smallholder farming community as per Stephan and Uhlaner (2010 ) who observe that greater rates of entrepreneurship are found in societies where the entrepreneur is endowed with higher social status and as more individuals value entrepreneurship as a result of the higher social status conferred on entrepreneurs in those societies, the demand for and supply of entrepreneurs increase . The researcher also considered the people's perception on creativity, risk taking as well as aggressive tendencies. According to Paravisini (2008) the culture of creativity, aggressiveness, and risk taking are important for successful smallholder farming entrepreneurship. The other aspect that were considered is how the smallholder farming community in Taita Taveta County views the state of being independent. This is because a culture that values independence has more of its people preferring self-employment rather than working for others (Henrekson & Sanandaji 2010).

On the independent variable social network, it is noted that smallholder farming entrepreneurs are part of the larger collection of individuals such as other farmers,

suppliers of farm inputs, transporters, marketers, processors and financial service providers among others. The smallholder farming entrepreneur's network therefore, is the sum total of his or her relationships that involves all the connections with the other people (Gartner & Bellamy, 2009). In this study network was measured in terms of the number of linkages individual farmers have established with other farmers, the extent to which the farmers are connected to service providers such as business development services, credit service providers and marketing agents among others. These connections/networks accord smallholder farmer entrepreneur the use of resources that are external to the farm venture thus achieving the objective of gaining a competitive advantage by extending resource availability beyond the assets under their direct control (Barona & Gomez, 2009).

### **3.14 Ethical issues**

The ethical issues that emerge in this study included confidentiality and privacy, anonymity and voluntary and informed consent (Kothari & Garg, 2011). To ensure confidentiality and privacy of the information given, the research assistants were trained in advance on these ethical issues alongside the data collection procedures to ensure that the information given by the respondents was treated with utmost confidentiality. Further, all filled questionnaires were collected and kept in lockable cabinet. To ensure anonymity, the identity of the respondents was protected by only using numbers to mark the collected questionnaires. The researcher conformed to the principle of informed consent by seeking consent from the participants before administering the questionnaires and or carrying out the interviews. The researcher and the research assistants begun by explaining to the participants the purpose of the research study, informing them that the data collected was for academic purposes and guaranteeing them anonymity and confidentiality of the information given. They informed them of the institution of affiliation and also explained to them the scope of the study in terms of the nature of data that was going to be collected and the geographical scope of coverage. To prove that it was for academic purposes researcher or the research assistants produced letters of authority to collect data from

NACOSTI and the County director of agriculture, Taita taveta County as well as the letter from the director, board of post graduate studies JKUAT.

## CHAPTER FOUR

### RESEARCH FINDINGS AND DISCUSSION

#### 4.1 Introduction

This chapter discusses reliability analysis of the collected data as well as the response rate and demographic data of the respondents. The chapter also discusses the descriptive and inferential analysis of the respondents' responses on various research questions and testing of the study's hypotheses. Finally, the chapter discusses the analysis of the collected qualitative data.

#### 4.2 Reliability

Although a pilot test was done through use of Cronbach's alpha to establish the reliability of the data collection instruments, a further test was done again with the whole set of the 391 returned questionnaires to confirm the consistency of the instruments. The results of this test (involving all the returned questionnaires) are presented in Table 4.1

**Table 4.1: Reliability Statistics**

Scale	No. of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Remarks
Smallholder Farming Entrepreneurship	16	0.784	0.776	Acceptable
Access to finance	12	0.761	0.754	Acceptable
Formal education	10	0.724	0.721	Acceptable
Entrepreneurial culture	9	0.708	0.704	Acceptable
Social Network	13	0.714	0.711	Acceptable

As shown in Table 4.1, Cronbach’s alpha values for all the variables were all acceptable as they were all above 0.7. This is in conformity with Dominguez (2014) who observe that an alpha value that is more than 0.7 is acceptable. This was a further confirmation that the research instruments that were used in this study were reliable.

### 4.3 Response Rate

The sample of the study comprised of a total of 397 smallholder farmers. A total of 397 questionnaires were given out to the research assistants to administer to the various categories of the sampled smallholder farmers. Out of this a total of 391 questionnaires were successfully filled comprising of 105 questionnaires from smallholder dairy farmers, 107 questionnaires from smallholder banana farmers, 22 questionnaires from smallholder onion and tomato farmers and 118 questionnaires from smallholder drought resistant and local livestock farmers giving an overall response rate of 98.5% as summarized in Table 4.2.

**Table 4.2: Response Rate**

<b>Category/Strata</b>	<b>Sample Size</b>	<b>Response</b>	<b>Response Rate (Percentage)</b>
Smallholder Dairy farmers	105	105	100
Smallholder Banana farmers	108	107	99
Smallholder Onion/Tomato farmers	22	22	100
Smallholder Vegetable farmers	39	39	100
Smallholder Drought resistant crops/local livestock farmers	123	118	96
<b>Total</b>	<b>397</b>	<b>391</b>	<b>99</b>

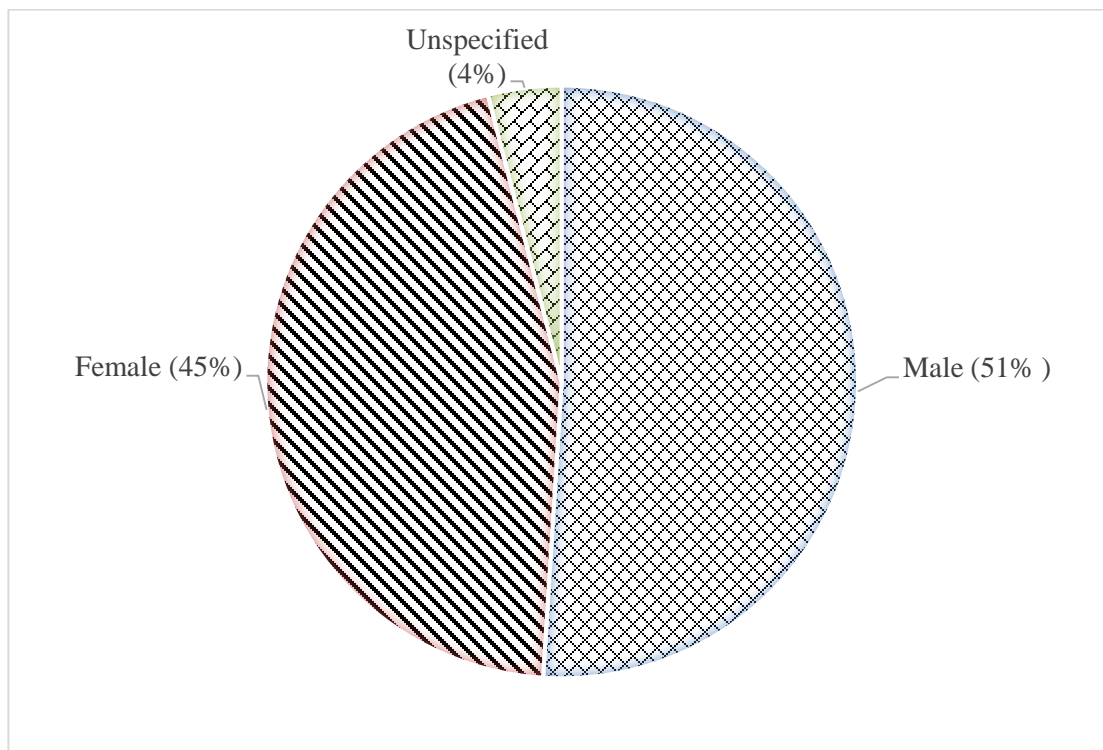


#### **4.4 Demographic Information of the Study Sample**

The demographic issues discussed in this section are gender, age and level of educational for the respondents as presented below.

##### **4.4.1 Gender of the Respondents**

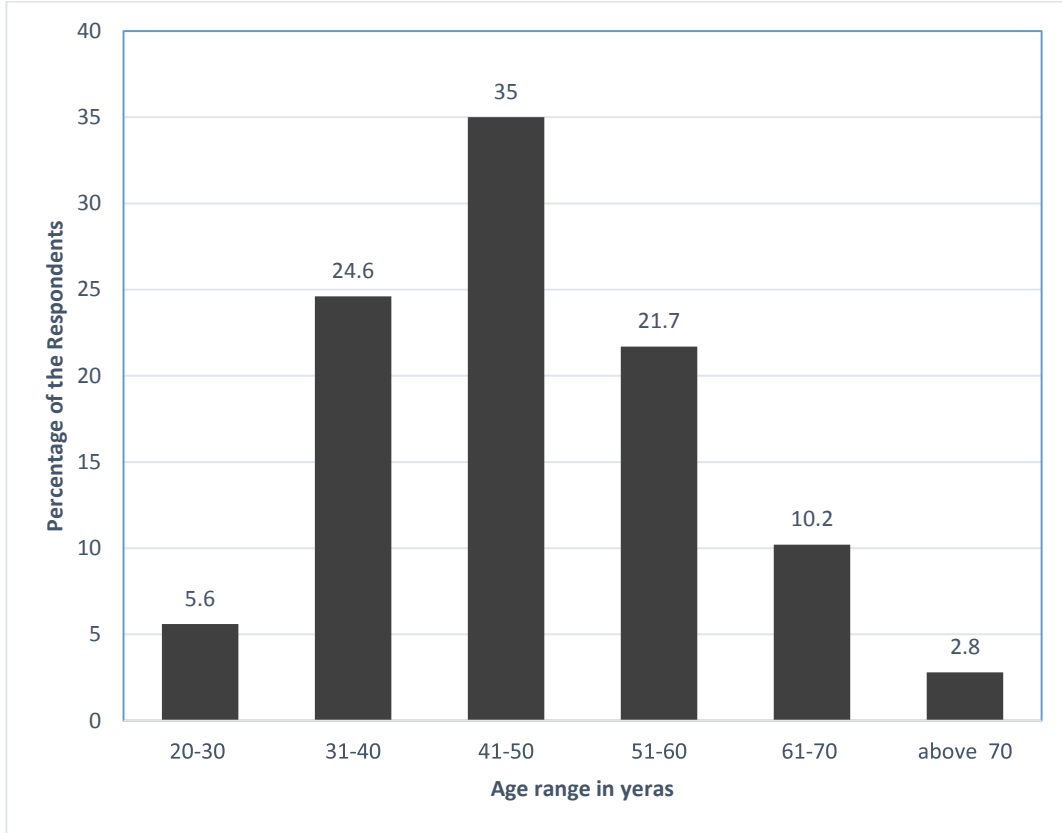
On the question of gender, 45% of the respondents were female and 51% were male while 4% of the respondents did not indicate their gender as illustrated in Figure 4.1. This shows that, the number of male smallholder farmers in Taita Taveta is slightly higher than the female smallholder farmers by a margin of 5. This is an indication of an opportunity for smallholder farming entrepreneurship in Taita Taveta county since men are the main owners of the farms and are therefore central in decision making on smallholder farming entrepreneurship.



**Figure 4.1: Gender of Respondents**

#### **4.4.2 Age of the Respondents**

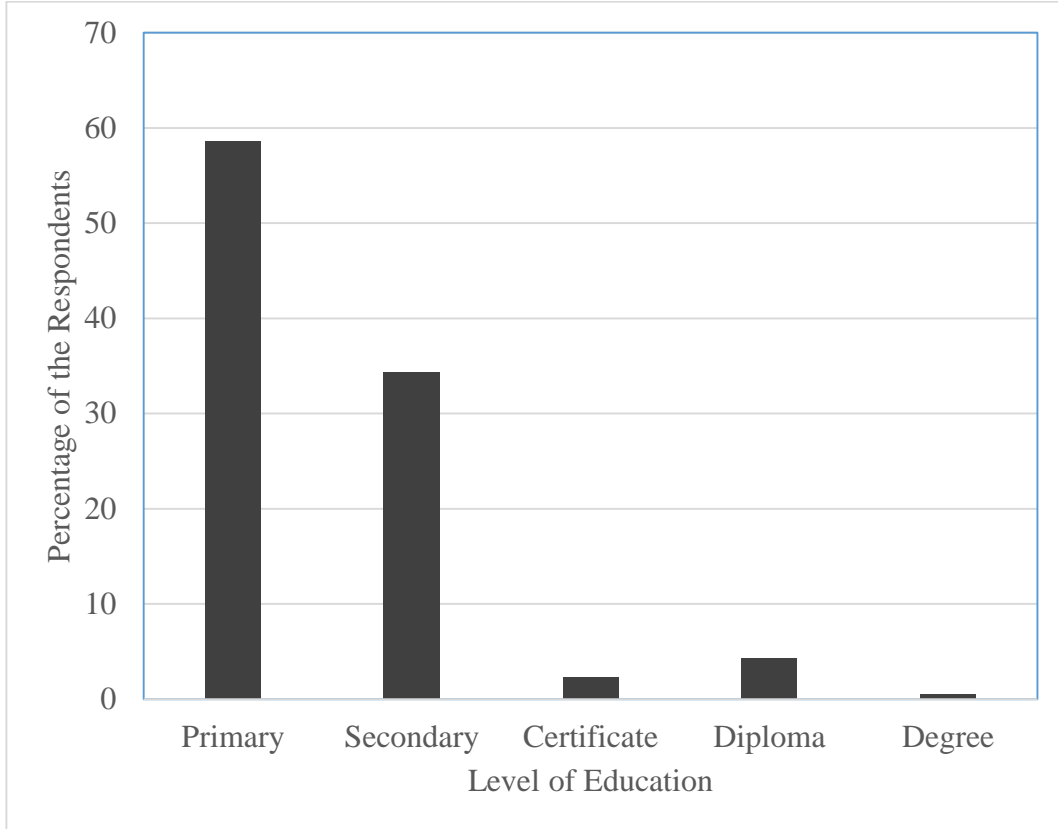
Slightly over a third (35%) of the respondents were aged between 41 and 50 years, 24.6% of the respondents were aged between 31 and 40 years while only 2.8% of the respondents were over 70 years of age and 5.6% were aged between 20 and 30 years. This means that about 70% of the smallholder farmers in Taita Taveta County are over 41 years of age with only 30% of the smallholder farmers being at the age bracket of 20-40 years. This is an indication of an aging farming community that may not be receptive to changes and may be slow in undertaking smallholder farming entrepreneurship (see Figure 4.2).



**Figure 4.2: Age of the respondents**

#### **4.4.3 Education Level of the Respondents**

About half (58.6%) of the respondent had a primary certificate, 34.3% had a secondary certificate, 2.3% had a post-secondary certificate, 4.3% had a diploma certificate and only 0.5% had a degree certificate (see Figure 4.3). This means that most of the smallholder farmers (92.9%) in Taita Taveta County had attained education only up to secondary level. This means that most of the respondents would require formal trainings to facilitate them perceive and exploit available entrepreneurship opportunities.



**Figure 4.3: Education level the respondents**

#### **4.5 Descriptive Statistics**

In this section the researcher analyzed descriptive statistics for the dependent variable smallholder farming entrepreneurship and dependent variables access to finance, formal education, entrepreneurial culture and social network where the respondents had been requested to react to various questions on the variables on a five point scale of strongly agree (SA), agree (A), undecided (UN), disagree (DA) and strongly disagree (SDA). The responses obtained were quantified using percentages and presented in tables.

#### **4.5.1 Smallholder Farming Entrepreneurship**

On the responses to the questionnaire questions on the dependent variable smallholder farming entrepreneurship as illustrated in Table 4.3, most of the of the respondents (95.6%) had several farming activities in their farms with very few (4.4%) respondents not having several activities in their farms. Slightly more than half of the respondents (64.7%) did not use modern farm machinery while only 30.9% of the respondents used modern farming machinery. Seventy-seven percent of the respondents had agro-vet as their source of planting seeds as 24.2% of the respondents did not source planting seeds from the agro-vet. On the other hand, about half of the respondents (50.7%) used fertilizer all the time while 43.2% of the respondents did not as very few (6.1%) respondents remained undecided on whether they used fertilizer.

On the use of pesticides and insecticides, slightly more than half (68.5%) of the respondents agreed or strongly agreed to having used pesticides and insecticides in their farms while 28.4% generally disagreed on having used pesticides and insecticides in their farms as 62.1% of the respondents did not find new sources of farm inputs while only a third (31.2%) had found new sources of farm inputs. About seventy-two percent of the respondents agreed or strongly agreed that they often consulted agricultural experts while only 24% of the respondents disagreed with a negligible number (4.3%) of the respondent's undecided on whether they consulted agricultural experts.

Further, the majority (80.1%) of the respondents did not exhibit in the agricultural shows an indication that most of the smallholder farmers in Taita Taveta County did not have unique products. About 62.7 % of the respondents did not have farming techniques that are different from their neighbors while about a third (33.5%) of the respondents had farming techniques that were different from their neighbors. On the issue of markets about half (51.6%) of the respondents had not found new market for their products while only 42% of the respondents had found market for their products as 72.7% of the same respondents had not signed market contracts with their buyers while only a fifth (23%) of

the respondents had signed market contract with their buyers. Seventy-seven percent of the respondents had same products as their neighbors while a few (19.7%) of them had products that were different from their neighbors with the rest remaining undecided on this question. Still as indicated in Table 4.3, the majority (89%) of the respondent disagreed or strongly disagreed that they provided extension services to other farmers for pay while only very a few (8.4%) of the respondents agreed that they provided extension services to other farmers for pay and as a negligible number (3.1 %) of the respondents remained undecided on this issue of extension service provision.

About 86 % of the respondents did not sell their products on packaged form with only 13.6% of the respondent selling their products in packaged form as only a tenth (11.6%) of the respondents sold value added products from their farm with the rest of the respondents not selling value added products from their farm. The respondents' responses show that innovation and hence smallholder farming entrepreneurship among smallholder farmers in Taita Taveta County was generally low (see Table 4.3). This finding was in conformity with County Government of Taita Taveta, (2013), that observes that although most of the smallholder farmers in Taita Taveta county engage in diversified farm enterprises such as Tomatoes, bananas, onions, green grams, beans, cabbages and dairy keeping among others, very few smallholder farmers (0.5%) venture in innovative and emerging livestock enterprises such as ostrich farming, crocodile farming, tortoise farming, silkworm farming, snail farming and butterfly farming. County Government of Taita Taveta, (2013) further notes that very few smallholder farmers engage in innovative crop enterprises such as moringa, mushroom, aloe vera and jatropa farming among other crop enterprises.

**Table 4.3: Smallholder Farming Entrepreneurship**

Statement	Response
-----------	----------

	SD	DA	UD	A	SA
	(1)	(2)	(3)	(4)	(5)
I have several farming activities in this farm	0.8%	2.8%	0.8%	63.9%	31.7%
I use modern farm machinery	5.1%	59.6%	4.3%	25.8%	5.1%
Agro vet is always the source of my planting seeds	1.3%	19.2%	2.6%	64.2%	12.8%
I use fertilizers all the time	4.3%	38.9%	6.1%	41.7%	9.0%
I use pesticides and insecticides all the time	1.8%	27.6%	2.0%	53.2%	15.3%
I have found a new source for my farm inputs(seeds, fertilizers, chemicals)	6.1%	56.0%	6.6%	27.1%	4.1%
I always consult with Agricultural experts	2.8%	21.2%	4.3%	62.4%	9.2%
I often exhibit in trade fairs and shows	22.3%	57.8%	3.1%	14.6%	2.3%
My farming techniques are always different from my neighbours'	12.5%	50.1%	3.8%	28.6%	4.9%

**Table 4.3: Smallholder Farming Entrepreneurship (continued)**

<b>Statement</b>	<b>Response</b>				
	SD	DA	UD	A	SA
	(1)	(2)	(3)	(4)	(5)
I have found market for all my products	8.4%	43.2%	6.4%	36.1%	5.9%
I have signed market contracts with my buyers	18.2%	54.5%	4.3%	18.9%	4.1%
I have products that are not found among my neighbours	17.9%	58.8%	3.6%	16.9%	2.8%
I often provide extension services to other farmers for a pay	30.2%	58.8%	2.6%	6.6%	1.8%
Other farmers make study visits to my farm for a pay	28.1%	62.1%	3.1%	5.6%	1.0%
I sell my products in a packaged form	15.9%	69.6%	1.8%	9.0%	4.6%
I sell value added products from my farm	16.1%	9.6%	2.8%	6.1%	5.4%

**4.5.2 Access to Finance**

On the independent variable access to finance, the majority (82.9%) of the respondents agreed that external financing is needed for addition of more enterprises in the farm where a small number (13.3%) of the respondents strongly agree or disagreed (15.4%) with a



negligible number (7%) of the respondents' undecided on whether external financing is needed for addition of more enterprises in the farm. On whether acquisition of farm inputs require financing, a big number (83.1%) of the respondents were in agreement with a small number (13.3%) of the respondents either strongly agreeing or just disagreeing (16.1%) that acquisition of farm inputs require financing. Further, slightly more than half (62.4%) of the respondents were in agreement that financing is needed to discover new sources of farm inputs with a negligible number of the respondents (6.9%) strongly agreeing with the statement. On the other hand, a third (34%) of the respondents generally disagreed that financing is needed to discover new sources of farm inputs with very few (3.6%) of the respondents being undecided. On whether implementation of new farm practices require finance, the majority (81.8%) of the respondents either agreed or strongly agreed with just a handful (4.1%) of the respondents being undecided and the rest either agreeing or strongly agreeing.

Slightly over half (67.7%) of the respondents agreed or strongly agreed that acquisition of new technologies in the smallholder farms need financing with 26.3% generally disagreeing that acquisition of new technologies in the smallholder farms need financing (see Table 44a).

**Table 4.4a: The influence of Access to Finance on smallholder farming entrepreneurship**

Statement	Response				
	SD	DA	UD	A	SA
	(1)	(2)	(3)	(4)	(5)
Addition of more enterprises in Farm need external financing	2.6%	12.8%	1.8%	69.6%	13.3%
Acquisition of farm inputs require financing	3.6%	12.5%	0.8%	72.6%	10.5%
Financing is needed to discover new sources of farm inputs	4.6%	29.4%	3.6%	55.5%	6.9%
Implementation of new farm practices require financing	1.0%	14.1%	3.1%	73.4%	8.4%
Financing facilitate marketing of the farm products.	4.3%	25.8%	4.1%	58.8%	6.9%
Acquisition of new technologies need financing	3.8%	22.5%	5.9%	57.5%	10.2%

About half (52.7%) of the respondents generally agreed that financial service providers with suitable financial products are available with 11% of the respondents being undecided and the rest disagreeing that financial service providers with suitable financial products are available. Slightly over a third (35.1%) of the respondents meet all the collateral conditions of the financial service providers while close to a half (48.8%) of the respondents do not while a small number (15.1%) of the respondents remained undecided.

Further, more than a half (65%) of the respondents were not satisfied with the interest rate offered by the financial service providers with about a fifth (22.5%) of respondents generally satisfied with the interest rate offered by the financial service providers as 62.9% generally not able to access credit whenever they needed it as 27.1% of the respondents were able to access credit whenever they needed it. Slightly more than a half (55.5%) of the respondents generally disagreed with the time taken by the financial service providers to process their credit as a third (30.9%) of the respondents agreed with the time taken by the financial service providers to process their credit while a just few (13.6 %) of the respondents remained undecided on the time taken by the financial service providers to process their credit. The responses from the respondents on the independent variable access to finance show that smallholder farmers in Taita Taveta county had a low access to finance. Access to finance therefore had no significant influence on smallholder farming in the county (see Table 4.4b). This finding contracts the study by Mudiwa (2017) that established that the farmers ability to access credit were key in determining their entrepreneurial orientation during his study to investigate how collective entrepreneurship by smallholder farmers in Chipinge district in Zimbabwe unlock market opportunities and a study by Zahurul (2013) that indicated access to finance as a major factor that positively influenced the success of the entrepreneurs.

**Table 4.4b: The influence of Access to Finance on smallholder farming entrepreneurship**

Statement	Response				
	SD	DA	UD	A	SA
	(1)	(2)	(3)	(4)	(5)
Financial service providers with suitable financial products are available	5.1%	31.2%	11.0%	49.4%	3.3%
I meet all the collateral conditions of the financial service providers	7.4%	40.4%	15.1%	34.0%	3.1%
I am satisfied with the interest rate offered by the financial service providers	12.3%	52.7%	12.5%	19.2%	3.3%
I always access credit whenever I need it	6.4%	56.5%	10.0%	24.3%	2.8%
The time taken by the financial service providers to process my credit is acceptable	5.6%	49.9%	13.6%	27.6%	3.3%
I often get credit for my farm operations	6.9%	59.6%	7.7%	22.5%	3.1%

### **4.5.3 Formal Education**

According to the descriptive statistics results for the independent variable formal education, nearly all (91.3%) the respondents generally agreed that education is vital for diversification in the farm with an insignificant number (1.5%) of the respondents being undecided and the rest either disagreeing or strongly disagreeing that education is vital for diversification in the farm. On whether new farming technologies needed education, a big number (88.8%) of the respondents were in agreement as the rest either in disagreement or undecided that education is needed for new farming technologies in the farm. On whether education is needed to do value addition the majority (87%) of the respondents either agreed or strongly agreed while the rest either disagreed or were undecided on whether education is needed to do value addition in the farm. Slightly over a half (67%) of the respondents agreed that discovery of new sources of farm inputs needed education as about a third (29.2%) of the respondents generally disagreed with very few (3.8%) of them being undecided on whether discovery of new sources of farm inputs needed education.

Further, a big number (88.2%) of the respondents generally agreed that more education would help them discover more markets while only 10.1% disagreed as insignificant number (4.6%) of the respondents were undecided on whether they needed more education to discover more markets. Once again, the majority (86.5%) of the respondents generally agreed that education enhances market contracting as the rest either disagreed or were undecided. On whether education was needed to understand and use digital marketing platforms, over a half (63.4%) of the respondents were in agreement with barely a third (30.7%) of the respondents strongly agreeing while the rest either disagreed or were undecided on whether education enhances market contracting. Regarding the question on whether education was needed to train other farmers, majority of the respondents (82.3%) were in agreement and only very small number (3.3%) remained undecided as the rest disagreed that they needed education to train other farmers. Further, most (83.1%) of the respondents generally agreed that growing of specialty products require educated farmers

as only 10.2% disagreed that growing of specialty products require educated farmer as nearly all the respondents (97.5%) agreed that education can lead to a better and different farming. From the responses as illustrated in Table 4.5, formal education has significant influence on smallholder farming entrepreneurship in Taita taveta County. This finding is in conformity with the studies by Mohd, Muhammad, Noorliza , and Anees (2010) and Etriya, Victor, Emiel, and Onno (2012) that established that education exhibit a significant influence on smallholder farming entrepreneurship as demonstrated by its role to facilitate knowledge on agribusiness management and marketing.

**Table 4.5: The influence of Formal education on smallholder farming entrepreneurship**

Statement	Response				
	SD	DA	UD	A	SA
	(1)	(2)	(3)	(4)	(5)
Education is vital for diversification in the farm	1.3%	5.9%	1.5%	67.0%	24.3%
Understanding of new farming technologies need education	1.5%	8.4%	1.3%	64.2%	24.6%
I need education to do value addition	2.6%	8.2%	2.3%	68.3%	18.7%
Discovery of new sources of farm inputs need education	5.4%	23.8%	3.8%	56.0%	11.0%
I will discover more markets for my products if I have more education	1.0%	6.1%	4.6%	72.1%	16.1%
Education enhances market contracting	0.3%	3.6%	9.7%	70.1%	16.4%
I need education to understand and use digital marketing platforms	0.3%	3.1%	2.6%	63.4%	30.7%
I need education to train other farmers	1.3%	13.0%	3.3%	67.5%	14.8%
Growing of specialty products require educated farmers	1.0%	9.2%	6.6%	63.4%	19.7%
Education can facilitate farming differently and better	0.3%	1.5%	0.8%	68.3%	29.2%

#### **4.5.4 Entrepreneurial Culture**

From the results of the respondents' responses on entrepreneurial culture, the majority (89.8%) of the respondents generally agreed that aggressiveness is needed for discovery of new sources of inputs with very insignificant number (0.8%) being undecided and the rest disagreeing that aggressiveness is needed for discovery of new sources of inputs while still the majority (91%) of the respondents agreed that desire for independence leads to farm diversification as the rest either disagreed or were undecided that independence leads to farm diversification. On whether creativity is needed to practice farm tourism a big number (88.8%) of the respondents either were generally in agreement while the rest either disagreed or were undecided on whether creativity is needed to practice farm tourism. Most (89.3%) of the respondents agreed that production of specialty products is about risk taking as a negligible number (4.3%) of the respondents generally disagreed with only 6.4% being undecided on whether production of specialty products is about risk taking.

Further, nearly all (95.1%) the respondents either agreed or strongly agreed that innovative practices in the farm will make the farmer gain recognition in the community while only 1.3% disagreeing as 3.6% were undecided that innovative practices in the farm will make the farmer gain recognition in the community. A big number (85.4%) of the respondents generally agreed that individuals who act aggressively are admired as the rest either disagreed or were undecided. On whether people who are self-employed are respected, 67.3% of the respondents agreed with 15.9% strongly agreeing while the rest either agreed or were undecided that people who are self-employed are respected as 66.5% of the same respondents disagreed on the existence of many people undertaking unique farming activities in the community while only a fifth (20.2%) of the respondents agreed as the rest remained undecided on the existence of many people undertaking unique farming activities in the community. Slightly over a half (56 %) of the respondents either disagreed or strongly disagreed that people in the community always try new things while about a third (35.6%) of the respondents agreed as very small number (8.4%) of the respondents remained undecided that people in the community always try new things. On whether the



community favorably compete with the other communities about a half (52.7%) of the respondents generally disagreed with the rest either agreeing while a third (33.5%) of the respondents strongly agreed as 3.6% or undecided (see Table 4.6). From the responses on the entrepreneurial culture it can be concluded that majority of the smallholder farmers in Taita Taveta County agree that entrepreneurial culture influences smallholder entrepreneurship. This finding agrees with the observation by Amarendra (2013) that entrepreneurial culture (curiosity, determination, persistence, visionary, hardworking, honesty and integrity) was a critical factor in smallholder farming entrepreneurship in Uttar Pradesh, India.

**Table 4.6: The influence of Entrepreneurial Culture on smallholder farming entrepreneurship**

Statement	Response				
	SD	DA	UD	A	SA
	(1)	(2)	(3)	(4)	(5)
aggressiveness in behavior is needed for discovery of new sources of farm inputs	1.0%	8.4%	0.8%	72.6%	17.1%
Desire to for independence lead to farm diversification.	0.8%	3.6%	4.6%	75.7%	15.3%
Creativity is needed to practice farm tourism.	0.8%	3.3%	4.1%	68.3%	23.5%
Production of specialty products is about risk taking	0.5%	3.8%	6.4%	71.4%	17.9%
Innovative practices in the farm will make the farmer gain recognition in the community.	0.3%	1.0%	3.6%	75.4%	19.7%
Individuals who act aggressively are admired.	1.0%	6.9%	6.6%	69.8%	15.6%
People who are self-employed are respected	1.0%	7.4%	8.4%	67.3%	15.9%
Most of the people in this community are self employed	1.0%	9.0%	8.2%	55.0%	26.9%
There are many people undertaking unique farming activities in this community.	16.6%	49.9%	13.3%	16.1%	4.1%
People in this community are always trying new things	10.2%	45.8%	8.4%	31.5%	4.1
My community favorably compete with other communities	8.2%	44.5%	8.2%	35.5%	3.6%

#### **4.5.5 Social networks**

According to the descriptive statistics results for the independent variable social networks, most (88.7%) of the respondents generally agreed that connections facilitate acquisition of finances while only an insignificant number (1.8%) of the respondents were undecided as the rest disagreed that connections facilitate acquisition of finances. Nearly all (92.1%) of the respondents agreed or strongly agreed that linkages help discover new sources of farm inputs while only a very small number (7.9%) of the respondents either disagreed or where undecided that linkages help discover new sources of farm inputs as 73.7% of the respondents were undecided on whether new markets can be established through connections as close to a half (48%) of the respondents agreed while the rest disagreed whether new markets can be established through connections. On the issue of whether linkages promote acquisition of new farm technologies, 92.1% of the respondents were in general agreement with the rest of the respondents either slightly disagreeing or slightly undecided on whether linkages promote acquisition of new farm technologies as a big number (88.2%) of the respondents agreed or strongly agreed that introduction of new farming practices require networking with other farmers while insignificant number (7.7%) of the respondents disagreed as only 3.8% of the respondents remained undecided on whether introduction of new farming practices require networking with other farmers.

About 70% of the respondents did not visit other farmers outside Taita Taveta county with slightly more than a fifth (22.2%) of the respondents having been able to make such visits as almost equal (49.6% and 44%) number of respondents agreeing or disagreeing with the rest undecided that they often attend agricultural stakeholders' meetings. On the other hand, 58.1% disagreed or strongly disagreed that they had contacts of most of the Agricultural stakeholders in the county while 35.3% of the respondents generally agreed as only 6.6% of the respondents were undecided on whether they had contacts of most of the Agricultural stakeholders in the county. Further, 66.1 % of the respondents were members of a common interest group while about a third (33.3%) of the respondents were not members of a common interest group with the rest of the respondents being undecided

on whether they were members of a common interest group. On the question of attending trade fair, about half (56.6%) of the respondents did not quite often attend trade fairs and shows while 37.4% of the respondents did.

Further, most (82.6%) of the respondents knew their role model while only 8.4% did not know as 89.5% of the respondents knew who to consult when it is necessary while only a tenth (10%) of the respondents did not know who to consult whenever it was necessary. Finally, 89% of the respondents agreed or strongly agreed to often attend meetings with other farmers with a tenth (10.7%) of the respondents disagreeing or being undecided on whether they often attend meetings with other farmers.

Generally, most of the responses captured on social network indicated that many of the smallholder farmers had social network though in a number of instances the social networks were weak as illustrated in Table 4.7. The responses also tended to indicate that the social networks had influence on smallholder entrepreneurship. This finding is corroborated by a study by Babu, Abdullahi and Abubakar (2010) study on strengthening entrepreneurial capacity of Nigerian smallholder farming that established the need for improved social networks to strengthen the entrepreneurial capacity of the Nigerian agricultural industry and that innovation and entrepreneurship among SMEs is enhanced through internal factors and external factors like information on customer requirements and demand obtained through linkages to suppliers of equipment's and materials, business service providers and other SMEs among other linkages.

**Table 4.7: The influence of Social Networks on smallholder farming entrepreneurship**

Statement.	Response				
	SD	DA	UD	A	SA
	(1)	(2)	(3)	(4)	(5)
Connection facilitate acquisition of finances	1.5%	7.9%	1.8%	73.9%	14.8%
Linkages helps discover new sources of farm inputs	0.5%	5.1%	2.3%	78.3%	13.8%
New markets can be established through connections	0.0%	1.8%	73.7%	24.0%	24.0%
Linkages promote acquisition of new farming technologies	0.3%	4.1%	3.6%	77.0%	15.1%
Introduction of new farming practices require networking with other farmers	0.5%	7.2%	3.8%	71.6%	16.6%
I always visit other farmers outside my sub-county	11.5%	59.8%	6.4%	17.9%	4.3%
I often attend agricultural stakeholders meetings	5.4%	38.6%	6.4%	45.3%	4.3%
I have contacts of most of the Agricultural stakeholders in the county	4.9%	53.2%	6.6%	32.0%	3.3%
I am a member of a producer group/ common interest group	2.0%	25.3%	3.6%	55.0%	14.1%
I often attend trade fairs and shows	11.8%	44.8%	6.1%	32.5%	4.9%
As a farmer, I know my role model	1.0%	7.4%	9.0%	66.5%	16.1%
Whenever I am not sure about something in my farming activities, I know who to consult	1.5%	4.1%	4.9%	71.6%	17.9%
I often attend meetings with other farmers	0.8%	7.7%	2.6%	71.1%	17.9%

#### 4.6 Diagnostic Tests

In order to ensure unbiased inferential statistics, the researcher, using the collected data, subjected the sample regression model to reliability, normality, heteroscedasticity, multicollinearity and linearity tests to check whether the multiple regression model obeyed the homoscedasticity, non-multicollinearity, normality and reliability assumptions. On reliability test, Cronbach's alpha values computed through SPSS were used and the results indicated that the Cronbach's alpha values for, the independent variables; access to finance, formal education, entrepreneurial culture, and social network were all above 0.7 while that of the dependent variable smallholder farming entrepreneurship was 0.8 as illustrated in Table 4.8. These values were all acceptable according to KIM, (2009). This meant that the measurement of the data used in the study was reliable.

**Table 4.8: Reliability Test**

Scale	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Remarks
Smallholder Farming Entrepreneurship	16	0.800	0.801	Acceptable
Access to finance	12	0.778	0.777	Acceptable
Formal Education	10	0.731	0.726	Acceptable
Entrepreneurial Culture	9	0.746	0.741	Acceptable
Social Network	13	0.763	0.755	Acceptable

On the normality test, skewness values obtained through SPSS were used. The results indicated that the skewness values for the independent variables; Access to finance, Formal Education, Entrepreneurial Culture, Social Network and Smallholder Farming Entrepreneurship were all between -0.5 and 0.5 as illustrated in Table (4.9). The skewness values of between -0.5 and 0.5 was a confirmation that the data collected was normally

distributed as provided by Stevens (2009) an indication therefore that the sample regression model from the collected data obeyed the normal distribution assumption.

**Table 4.9: Normality Tests**

		Skewness		Remarks
		Statistics	Std. Error	
Smallholder	Farming	0.193	0.123	Normal distribution
	Entrepreneurship			
	Access to finance	0.129	0.123	Normal distribution
	Education	-0.405	0.123	Normal distribution
	Culture	0.226	0.123	Normal distribution
	Social Network	-0.117	0.123	Normal distribution

Levene statistic test was used to test the homoscedasticity assumption of the regression model. From the collected data, the heteroscedasticity test showed all the p-values of the levene statistics at 0.05 level of significant to be less than 0.05 as illustrated in Table 4.10. This was an indication of existence of equal variance in the sampled data used in the study thus obeying the homoscedasticity assumption of the regression model as observed by Stevens (2009).

**Table 4.10: Homogeneity of Variances Test**

		Levene Statistic	df1	df2	Sig.	Remarks
Smallholder	Farming	.126	2	387	.0482	Acceptable
Entrepreneurship						
Access to finance		.743	2	387	.0476	Acceptable
Education		.862	2	387	.0423	Acceptable
Culture		.271	2	387	.0463	Acceptable
Social Network		1.246	2	387	.0289	Acceptable

For the test of existence or non- existence of collineality among the independent variables, the researcher used Variance Inflation Factors (VIF) obtained through SPSS. The results indicated that all the independent variable of the study (Access to finance, Formal Education, Entrepreneurial Culture and Social Network) had VIF value of greater than 1 but less than 10, an indication of non-existence of multicollineality among the independent variables of the study as illustrated in Table 4.11. This is in conformity with shieh (2010) who recons that for non-existence of multicollineality among the independent variables of a study, VIF values need to be greater or equal to 1. Further, Sheih (2010) observes that VIF values that exceed 10 are often regarded as indicating multicollineality and that VIF values of 2.5 may be a cause for concern.



**Table 4.11: Multicollinearity Test**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		Remarks
	B	Std. Error	Beta			Tolerance	VIF	
Constant	.365	.279		1.307	.192			
Access to finance	-.051	.037	-.064	-1.372	.171	.896	1.116	Acceptable
Education	.157	.059	.121	2.664	.008	.942	1.061	Acceptable
Culture	.038	.048	.040	.786	.432	.751	1.331	Acceptable
Social network	.494	.052	.052	9.467	.000	.771	1.298	Acceptable

As regards the linearity tests, the researcher used the Pearson partial correlation( $r$ ) coefficients values between smallholder farming entrepreneurship and access to finance, formal education, entrepreneurial culture and social network obtained through SPSS. The results of the Pearson partial correlation( $r$ ) coefficients values obtained between smallholder farming entrepreneurship and access to finance, formal education, entrepreneurial culture and social network were 0.069, 0.138, 0.264 and 0.486 respectively as illustrated in Table 4.12. These results confirmed the linearity assumption of the model. However, the positive linear relationship was weak as all the partial correlation values were less than 0.5. This is in conformity with Dominguez (2014) who observes that for weak linear correlation (positive or negative),  $r$  was close to 0 while a case of no linear correlation between the dependent variable and any of the independent variable,  $r$  would be 0.

**Table 4.12: Correlation matrix**

		Access to finance	Formal Education	Entrepreurial Culture	Social network
Formal Education	Pearson Correlation	.219**	1		
	Sig. (2-tailed)	.000			
	N	391	391		
Culture	Pearson Correlation	.240**	.143**	1	
	Sig. (2-tailed)	.000	.005		
	N	391	391	391	
Social network	Pearson Correlation	.205**	.055	.468**	1
	Sig. (2-tailed)	.000	.281	.000	
	N	391	391	391	391
Smallholder Farming	Pearson Correlation	.069	.138**	.264**	.486**
	Sig. (2-tailed)	.170	.006	.000	.000
Entrepreneurship	N	391	391	391	391

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

#### 4.7 Testing of the study hypotheses

In order to achieve the objectives of the study, the formulated null hypotheses were all subjected to t-tests at 95% level of confidence and the results were confirmed by further subjecting the hypotheses to F-tests at 95% level of confidence. The P-value approach facilitated through a multiple regression was used in conducting all the hypotheses of the study

**4.7.1 Hypothesis H<sub>01</sub>: Access to finance has no significant influence on Smallholder farming entrepreneurship in Taita Taveta County**

After subjecting the null hypothesis access to finance has no significant influence on smallholder farming entrepreneurship in Taita Taveta County to a t-test at 95% confidence level, the p- value for the variable access to finance was 0.088 as illustrated in Table (4.13). Since p-value is greater than alpha (0.05), the researcher fails to reject the null hypothesis and therefore concludes that access to finance has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.

**Table 4.13: t-test for Access to finance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	Std. Error	Beta		
1 (Constant)	.375	.274		1.371	.171
Access to finance	.064	.037	.080	1.712	.088

Dependent Variable: smallholder farming entrepreneurship

The null hypothesis results indicated in Table 4.13 were further confirmed by subjecting the null hypothesis to ANOVA test at 95% level of confidence where the p-value (0.170) was also greater than alpha (0.05) as illustrated in Table (4.14), further making the researcher to fail to reject the null hypothesis and therefore confirming the results of the t-test that, access to finance has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.

**Table 4.14: ANOVA for Access to Finance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.317	1	.317	1.887	.170 <sup>b</sup>
	Residual	65.429	390	.168		
	Total	65.747	391			

a. Dependent Variable: Smallholder farming entrepreneurship

b. Predictors: (Constant), Access to finance

From the two tests (t-test and F-test), it can be concluded that from the data obtained, access to finance does significantly influence smallholder farming entrepreneurship in Taita Taveta county. This could be explained from the fact that 65% of the smallholder farmers in Taita Taveta county were not satisfied with the interest rate offered by the financial service providers in the county and that about 62.9% of them were also not able to access credit whenever they needed it as revealed by the descriptive statistics in Table 4.4. This is in conformity with Mandama (2010) assertion that formal financial intermediaries refuse farmers from sourcing loans from their institutions due to lack of acceptable collateral, hence, branding the farmers as non-credit worthy. The conclusion that access to finance does not play a significant role in smallholder farming entrepreneurship in Taita Taveta county however, contradicted the observation that access to finance is critical to entrepreneurship development by several researchers in the reviewed literature such as Kerr and Nanda (2008) and Mandama (2010).

#### **4.7.2 Hypothesis H<sub>02</sub>: Formal education has no significant influence on Smallholder farming entrepreneurship in Taita Taveta County**

This null hypothesis was subjected to both t-test and F-test at 95% level of confidence. The results of the t-test as illustrated in Table 4.15,  $p=0.009$  and since  $\alpha=0.05$ ,  $p$  is less than  $\alpha$  and from the F-test results in Table 4.16,  $p=0.006$  and therefore less than  $\alpha$  (0.05). From the results of the t-test and the F-test, the null hypothesis that formal education has no significant influence on smallholder farming entrepreneurship in Taita Taveta County was rejected and the alternative hypothesis that formal education has significant influence on smallholder farming entrepreneurship in Taita Taveta County was accepted. This is in line with the study by Nwibo and Okorie (2013) involving three hundred and sixty smallholder entrepreneurs in Southeast Nigeria who found out that educational status and capital among other factors have significant effect on farming entrepreneurship and that the educational attainment of an entrepreneur is related to a decision to be an entrepreneur. In further conformity with the findings of this study that formal education significantly influence smallholder farming entrepreneurship in Taita Taveta county is the observation by Bakotic and Kruzic (2010); Sánchez (2010a) that education make people better equipped to perceive opportunities and provides knowledge that can be used by the individuals to develop new entrepreneurial opportunities.

**Table 4.15: t-test for Formal education**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	Std. Error	Beta		
1 (Constant)	.375	.274		1.371	.171
Formal Education	.153	.058	.118	2.623	.009

Dependent Variable: smallholder farming entrepreneurship

**Table 4.16: ANOVA for Formal Education**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.259	1	1.259	7.592	.006 <sup>b</sup>
	Residual	64.488	390	.166		
	Total	65.747	391			

a. Dependent Variable: Smallholder farming entrepreneurship

b. Predictors: (Constant), Formal education

#### **4.7.3 Hypothesis H<sub>03</sub>: Entrepreneurial culture has no significant influence on Smallholder farming entrepreneurship in Taita Taveta County.**

This hypothesis was also subjected to t-test at 95% confidence level and the results were further confirmed through an F-test at 95% level of confidence. The t-test results of the hypothesis H<sub>03</sub> indicates that  $p= 0.031$  and therefore less than alpha (0.05) as illustrated in Table 4.17 while the F-test results show that  $p= 0.000$  and therefore less than alpha (0.05) as indicated in Table 4.18. From the t-test and the F-test results, the null hypothesis that entrepreneurial culture has no significant influence on smallholder farming entrepreneurship in Taita Taveta County was rejected and the alternative hypothesis that Entrepreneurial culture has significant influence on smallholder farming entrepreneurship in Taita Taveta County was accepted. These results are corroborated by Mbam and Nwibo (2013) who observed that cultural values of an agri-entrepreneur/farmer significantly affect entrepreneurial activities in the farm and that new venture creation or self-employment initiative is one of these entrepreneurial behaviours that influence smallholder farming

entrepreneurship. Further, the results are in line with the findings by Henrekson and Sanandaji (2010) that an entrepreneurial culture is a commitment of the individual to the continuing pursuit of opportunities and developing an entrepreneurial endeavor to its growth potentials for the purpose of creating wealth for the individual and adding value to society.

**Table 4.17: t-test for Entrepreneurial culture**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	Std. Error	Beta		
1 (Constant)	.375	.274		1.371	.171
Entrepreneurial Culture	.088	.041	.111	2.170	.031

Dependent Variable: smallholder farming entrepreneurship

**Table 4.18: ANOVA for Entrepreneurial Culture**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.582	1	4.52	29.139	.000 <sup>b</sup>
	Residual	61.165	390	.157		
	Total	65.747	391			

a. Dependent Variable: Smallholder farming entrepreneurship

b. Predictors: (Constant), Culture



**4.7.4 Hypothesis H04: Social network has no significant influence on  
Smallholder farming entrepreneurship in Taita Taveta County**

This hypothesis was subjected to both t-test and F-test and the results of the t-test at 95% confidence level,  $p= 0.000$  and is less than alpha (0.05) as indicated in Table 4.19. On the other hand, the results of the F-test at 95% confidence level,  $p=0.00$  which is also less than alpha (0.05) as shown in Table 4.20. From both these results, the null hypothesis that social network has no significant influence on smallholder farming entrepreneurship in Taita Taveta County is rejected and the alternative hypothesis that social network has significant influence on smallholder farming entrepreneurship in Taita Taveta County is accepted. This is in line with the findings from the studies by Kamisan and Kamal (2009) and Zafir and Fazilah (2011) that showed that social networking benefits entrepreneurship and placed social networking among the crucial factors that influence entrepreneurship.

**Table 4.19: t-test for Social network**

Model	Unstandardized		Standardized	t	Sig.
	Coefficients				
	$\beta$	Std. Error	Beta		
1 (Constant)	.375	.274		1.371	.171
Social network	.462	.052	.443	8.859	.000

Dependent Variable: smallholder farming entrepreneurship

**Table 4.20: ANOVA for Social network**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.561	1	15.561	120.61	.000 <sup>b</sup>
	Residual	50.186	390	.129		
	Total	65.747	391			

a. Dependent Variable: Smallholder farming entrepreneurship

b. Predictors: (Constant), Culture

#### 4.8 Statistical Analysis of the Full Regression Model

The researcher through the SPSS tool, conducted a multivariate regression analysis to determine the coefficient of determination ( $R^2$ ) of the full sample model so as to establish the goodness of fit of the model. From the results, the coefficient of determination ( $R^2$ ) of the full sample regression model was 0.261 as illustrated in Table 4.21. This means that the independent variables (access to finance, formal education, entrepreneurial culture and social network) explains 26.1% of the variability of the dependent variable (smallholder farming entrepreneurship) thus, 74.6% of the change in the dependent variable smallholder farming entrepreneurship in Taita Taveta county was explained by other factors other than access to finance, formal education, entrepreneurial culture and social network. This is in conformity with Etriya, Victor, Emiel, and Onno (2012); Nwibo, and Okorie (2013) findings that beside the factors identified in this study, there are still a number of other factors such as farm size, age of the entrepreneur, marital status, unemployment, quest for financial independence and population of the investment area among others that positively influence smallholder farming entrepreneurship.

**Table 4.21: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.511	.261	.254	.35470	1.451

a. Predictors: (Constant), access to finance, formal education, entrepreneurial culture and social network

b. Dependent Variable: Smallholder Farming Entrepreneurship

Further, an analysis of variance (ANOVA) for the full sample model at 95% level of confidence, p-value was 0.000 and therefore less than alpha (0.05) as shown in Table 4.22. This means that independent variables (access to finance, formal education, entrepreneurial culture and social network) statistically significantly predict the dependent variable (smallholder farming entrepreneurship) and therefore the sample regression model exhibit a goodness of fit.

**Table 4.22: ANOVA for the Full model**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.183	4	4.167	34.144	.000 <sup>b</sup>
	Residual	48.564	387	.126		
	Total	65.747	391			

a. Dependent Variable: Smallholder Farming Entrepreneurship

b. Predictors: (Constant), access to finance, formal education, entrepreneurial culture and social network

#### **4.9 Estimated Model Coefficients**

From the earlier formulated sample regression model;  $Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$  where,  $Y_i$  represented the dependent variables; smallholder farming entrepreneurship,  $\beta_0, \beta_1, \beta_2, \beta_3$  and  $\beta_4$  represented the coefficients of the model,  $X_1$  represented access to finance,  $X_2$  represented formal education,  $X_3$  represented entrepreneurial culture,  $X_4$  represented social network and  $e$  represented the error term, a multiple regression analysis was done to determine the values of the coefficients;  $\beta_0, \beta_1, \beta_2, \beta_3$  and  $\beta_4$  of the model and the results were:  $\beta_0 = 0.375, \beta_1 = 0.064, \beta_2 = 0.153, \beta_3 = 0.088$  and  $\beta_4 = 0.462$  as illustrated in Table 4.23. From these results, the estimated full sample model is;  $Y_i = 0.375 + 0.064 X_1 + 0.153 X_2 + 0.088 X_3 + 0.462 X_4$  The unstandardized coefficients (B) in Table 4.23 indicate how much the dependent variable (smallholder farming entrepreneurship) varied with each of the independent variables

(access to finance, formal education, entrepreneurial culture and social network) when all other independent variables were held constant.

**Table 4.23: Overall Model Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.375	.274		1.371	.171
Access to finance	.064	.037	.080	1.712	.088
Formal Education	.153	.058	.118	2.623	.009
Entrepreneurial Culture	.088	.041	.111	2.170	.031
Social network	.462	.052	.443	8.859	.000

Dependent Variable: smallholder farming entrepreneurship

#### 4.10 Analysis of the Qualitative data

Qualitative data was obtained by interviewing the respondents on a number of questions on the dependent variable (smallholder farming entrepreneurship) and the independent variables (Access to finance, Formal education, Entrepreneurial culture and Social network). The analysis was done through a computer spreadsheet tool that involved identification of patterns of meaning across the interview responses through a rigorous process of generating codes, searching for themes among codes, reviewing the themes and interpreting the developed themes.

##### 4.10.1 Smallholder Farming Entrepreneurship

On the interview on whether the respondents had undertaken diversification in their farm, most (98.5%) of the respondents had undertaken diversification in their farm where about 68% of them engaged in both livestock and crops diversification while a third (30%) of the respondents engaged in crop diversification as a negligible number (1.5%) did not understand the question since crop rotation is not a farm diversification practice (see Table 4.24).

**Table 4. 24: Farming Diversification**

	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
Mixed farming (Livestock and Crops)	391	267	68.3
Mixed/Intercropping	391	118	30.2
Crop rotation	391	6	1.5

On the question on whether the respondents undertook specialty production, the results indicate that non-of the respondents undertook any specialty production as illustrated in

Table 4.25. This means that smallholder farmers in Taita Taveta county only produced common types of crops and livestock.

**Table 4.25: Specialty Production**

	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
None	391	391	100

On the services the respondents provided to other farmers, about 70% of the respondent provided technical oriented services to other farmers that included; training and advisory services on general husbandry, provision of farm inputs such as planting material like banana plantlets, linkage services to service providers and marketing services. The rest provided non- technical services like farm labour, transport services and demonstration plots as indicated in Table 4.26.

**Table 4.26: Services Provided to Other Farmers**

	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
Basic training/advise/consultancy	391	127	32.4
Selling farm inputs such as planting materials	391	59	15
Farm labor	391	48	12.2
Linkages/mobilization/leadership	391	50	13
Marketing	391	39	10
Offer on farm demonstration sites	391	33	8.4
Transport services	391	35	9

On the question of how the respondents market their products, only a very small number (19%) of the respondents used innovative/ entrepreneurial approaches to market their products. The innovative marketing approaches that were used by the respondents were contract marketing, cooperative marketing and common interest group marketing

approach. The rest of the respondents (81%) marketed their products through the commonly used approaches such as direct sales in the local market, and through middle men and brokers (see Table 4.27).

**Table 4.27: Marketing of Farm Products**

	N	Frequency	Percentage
Contract farming	391	36	9.2
Direct sales to the local market	391	169	43.3
Sales through middlemen/brokers	391	133	34.0
Collective sales through common interest groups/cooperatives	391	40	10.2
Direct sales at the farm gate	391	13	3.3

#### **4.10.2 Access to Finance**

The respondents' responses on the interview questions on the independent variable access to finance, only 42.5% of the respondents applied credit in the last three years and of those who applied (166) only 70 of them were able to get the applied for credit which was 18% of the total respondents as shown in Table 4.28. For the respondents who acquired credit, the credit ranged between Kenya shillings 2,000 and 250,000. This indicated that smallholder farmers in Taita Taveta county experience low access to finance (see Table 4.29).

**Table 4.28: Access to Finance**

	N	Frequency	Percentage
Number of farmers who have applied for credit in the past three (3) years	391	166	42.5
Number of farmers who have acquired credit in the last there (3) years	391	70	18



**Table 4.29: Amount of Finance Accessed**

<b>Kenya Shillings</b>	<b>Frequency</b>	<b>Percentage</b>
None	321	82
2,000-10,000	10	2.6
10,001-50,000	14	3.6
50,001-100,000	22	5.6
10,001-150,000	10	2.6
150,001-200,000	10	2.6
200,001-250,000	4	1
<b>Total</b>	<b>391</b>	<b>100</b>

When asked about the priority interventions to improve their financial access, a fifth (20%) of the respondents preferred lowering of interest rates, 42% preferred friendly products such as those that use group guarantee while 42% preferred use of alternative collaterals other than the traditional collaterals such as title deeds that are not accessible to smallholder farming entrepreneurs (see Table 2.30).

**Table 4.30: Improving Financial Access**

	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
Lowering cost of credit	391	79	20
Friendly credit products such a group guarantee	391	149	38
Use of alternative collaterals such as sales	391	163	42

### **4.10.3 Formal Education**

Concerning the interview on independent variable formal educations, the researcher sought to establish how the respondents used their formal education on farming entrepreneurship activities. From the results of the interview, most of the respondents used their formal education to improve farm enterprise production and farm enterprise profitability management practices such as farm business, opportunity perception and gross margin analysis as illustrated in Table 4.31.

**Table 4.31: How formal Education is used**

<b>How the Respondents used formal Education</b>	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
Enhance diversity of enterprises	391	5	1.3
Improve farm productivity (application of good farming practices)	391	143	36.6
Innovation and technology adoption	391	10	2.5
Marketing	391	12	3.1
Agro-business management (record keeping, gross margin analysis and choice of enterprises)	391	221	56.5

#### **4.10.4 Entrepreneurial Culture**

Regarding the independent variable entrepreneurial culture, the respondents were interviewed on their perception on self-employed people, assertiveness/aggressiveness individuals and on the extent of their innovation. From the results of this interview, over 86% of the respondents viewed self-employed people as innovative, progressive and hardworking (see Table 4.32)

**Table 4.32: Perception towards Self-employed Individuals**

	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
Positively viewed (innovative, progressive hardworking and knowledgeable individuals )	391	339	86.7
Negatively viewed (too aggressive and a threat to others)	391	52	13.3

Most (77%) of the respondents interviewed had a positive perception on assertive / aggressive people where they indicated that aggressive individuals earn respect and admiration among the people and are viewed as leaders as shown in Table 4.33.

**Table 4.33: Perception towards Assertive and Aggressive Individuals**

	N	Frequency	Percentage
Positively viewed (Respected, admired, potential leaders)	391	301	77
Negatively viewed (too aggrieve and a threat to others)	391	90	23

On the extent of trying new things, most of the respondents (75.4%) tried new things to a low extend (to a level of less than 30%) as indicated in Table 4.34. This demonstrated a situation of low innovation among smallholder farming entrepreneurs in Taita Taveta county

**Table 4.34: Extent of trying new things (innovation)**

	N	Frequency	Percentage
<b>Low (less than 30%)</b>	391	295	75.4
<b>Moderate (30%-60%)</b>	391	62	15.9
<b>High (more than 60%)</b>	391	34	8.7

#### 4.10.5 Social Networks

On social networks, the results show the respondents to have established linkages with input suppliers, marketing agents, business service providers, credit service providers and production support services. The strongest of the linkages was the input supply linkage which involved 22.5% of the respondents. The weakest linkage established was the savings linkage that involved only 4% of the respondents (see Table 4.35). This is an indication of low saving culture and some desire among the respondents hence smallholder farming entrepreneurs to use right farming inputs among others.

**Table 4.35: Linkage with Business Service Providers**

	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
Savings	391	4	1.0
Credit facilities	391	14	3.5
Business development services	391	34	8.7
Input supply	391	88	22.5
Marketing agents	391	47	12.0
Production support	391	6	1.50

On the linkages formed with financial service providers, most sought after financial service was credit facility where 27.4% of the respondents had linkage to. The respondents also sought business advisory services from the financial service providers with 11.2% having created linkages to access this service. Other aspects where linkages were created with financial service providers were on mobile money transfer services and savings (see Table 4.36).

**Table 4.36: Linkage with Financial Service Providers**

	<b>N</b>	<b>Frequency</b>	<b>Percentage</b>
Credit facilities	391	107	27.4
Savings	391	38	9.7
Business development services/Consultations	391	44	11.2
Mobile money transfer services	391	11	2.8

On linkages created with other farming entrepreneurs outside the county, linkages were done for information sharing at 37.6% and 23.8% through joint farmer training activities. Other collaboration done though on a low scale were; joint marketing, joint production and farm tourism. From the foregoing, it is clear that, social network was key in influencing smallholder farming entrepreneurship in Taita Taveta county (Table 4.37).

**Table 4.37: Collaborations with other farmers outside the county**

	N	Frequency	Percentage
Information sharing/ exchange (exchange visits/consultations)	391	147	37.6
Joint marketing activities	391	34	8.7
Joint production activities	391	8	2.0
Joint farmer training activities	391	93	23.8
Farm tourism	391	11	2.8

#### **4.11 Summary of the hypotheses tested**

The summary of the study hypotheses tested and the results is summarized as here below:

**H<sub>01</sub>: Access to finance has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.**

On undertaking a t-test and F-test on this hypothesis, the researcher failed to reject the null hypothesis and therefore concluded that access to finance had no significant influence on smallholder farming entrepreneurship in Taita Taveta County.

**H<sub>02</sub>: Formal education has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.**

After subjecting this test to t-test and F-test the null hypothesis was rejected and the alternative hypothesis that formal education has significant influence on smallholder farming entrepreneurship in Taita Taveta County was accepted.

**H<sub>03</sub>: Entrepreneurial culture has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.**

From the t-test and the F-test results, the null hypothesis rejected and the alternative hypothesis that Entrepreneurial culture has significant influence on smallholder farming entrepreneurship in Taita Taveta County was accepted

**H<sub>04</sub>: Social network has no significant influence on smallholder farming entrepreneurship in Taita Taveta County.**

From both the t-test and F-test results, the null hypothesis was rejected and the alternative hypothesis that social network has significant influence on smallholder farming entrepreneurship in Taita Taveta County was accepted.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1. Introduction**

The focus of this study was to determine the factors that influence smallholder farming entrepreneurship in Taita Taveta county and this chapter presents highlight of the key findings of the study. The chapter also presents conclusions that are based on the study findings and appropriate recommendations that are drawn from the study findings and conclusions. The chapter ends with suggested areas in which further research can be undertaken.

#### **5.2. Summary of Findings**

From the results, majority of the respondents had attained formal education up to secondary school level while most of the respondents were over 40 years of age. The diagnostic tests that focused on reliability, normality, heteroscedasticity, multicollineality and linearity indicated that the regression model of the study obeyed the assumptions of reliability, normality, homoscedasticity, lack of multicollineality and linearity. On examination of the full model of the study, the independent variables (access to finance, formal education, entrepreneurial culture and social network) were found to explain only about a fifth of the change in the dependent variable smallholder entrepreneurship. However, the results of the ANOVA test of the model showed the model to exhibit goodness of fit, an indication that the independent variables (access to finance, formal education, entrepreneurial culture and social network) statistically significantly predicted the dependent variable (smallholder farming entrepreneurship). The major findings in relation to each of the specific study objectives are summarized below.

**Specific Objective 1: To assess the influence of access to finance on Smallholder farming entrepreneurship in Taita Taveta County.**

The study established that majority of the smallholder farmers in Taita Taveta county were not satisfied with the interest rate as well as the collateral requirements from the financial service providers in the county leading to low access to finance. The fact that smallholder farmers in Taita Taveta county access to finance was low, the farming entrepreneurship activities that smallholder farmers engaged in had not been significantly influenced by access to finance. This was confirmed by the F-test and t- test results for access to finance where the null hypothesis was accepted in both cases leading to the conclusion that access to finance did not have a significant influence on smallholder farming entrepreneurship in Taita Taveta county. This means that the entrepreneurship activities that were undertaken by the smallholder farmers had not been influenced by financing offered by the existing financial service providers. Low access to finance among smallholder farmers in Taita Taveta county also meant that the farmers did not meet collateral requirements among other requirements of the financial institutions and that any entrepreneurship activity that would call for external financing would not be implemented.

**Specific Objective 2: To determine the influence of formal education on Smallholder farming entrepreneurship in Taita Taveta County.**

The study established that most of the respondents used their formal education to improve farm enterprise production and farm enterprise profitability management practices such as farm business, opportunity perception and gross margin analysis. Formal education therefore had influence on the entrepreneurial activities undertaken by the smallholder farming entrepreneurs in the county. Further, null hypothesis for formal education in both the F-test and t- test were rejected leading to the conclusion that formal education had a significant influence on smallholder farming entrepreneurship in Taita Taveta county. This finding presents a good opportunity for enhancing entrepreneurship among smallholder farmers by promoting education. This enhanced smallholder farming



entrepreneurship would be critical in turning round the economy of the county through increased job creation and poverty alleviation.

**Specific Objective 3: To establish the influence of entrepreneurial culture on Smallholder farming entrepreneurship in Taita Taveta County.**

From the results of this study, most of the respondents viewed self-employed people as innovative, progressive and hardworking and showed positive perception on assertive / aggressive people. Although majority of respondents did not undertake unique farming activities nor try new things in their farms, the entrepreneurial culture that they exhibited influenced their entrepreneurship activities that they undertook. The null hypothesis for the entrepreneurial culture was rejected for the F-test and t- test cases confirming that entrepreneurial culture significantly influenced smallholder entrepreneurship in Taita Taveta county. This presents an opportunity that can be exploited by all development stakeholders in Taita taveta county to enhance smallholder entrepreneurial orientation through promotion of cultural practices that enhance innovation and creativity among the smallholder farming community.

**Specific Objective 4: To examine the influence of social network on Smallholder farming entrepreneurship in Taita Taveta County.**

The findings of the study showed most of the social networks by smallholder farmers in Taita Taveta to have been established with input suppliers, marketing agents, business service providers, credit service providers and production support services to support their entrepreneurial activities. This was an indication that social network created by the smallholder farmers had influenced their entrepreneurship. On undertaking F-test and t-test on the social network (independent variable), the study established that the social network created had a significant influence on smallholder farming entrepreneurship in Taita Taveta county as the null hypothesis were rejected in both tests. From this finding there is need to cultivate more collaborative activities among smallholder farmers to

enhance knowledge sharing on potential farming entrepreneurship initiatives as well as linkages with service providers such as technology vendors, marketing agents, digital platforms and financial service providers among others.

### **5.3 Conclusion**

#### **Specific Objective 1: To assess the influence of access to finance on Smallholder farming entrepreneurship in Taita Taveta County.**

From the fact that most of the respondents in the study were not satisfied with the interest rate and the collateral requirements from the available financial service providers, it can be concluded that smallholder farmers in Taita Taveta county experienced low access to finance due to prohibitive interest rates charged by the financial service providers and lack of appropriate collaterals for securing finance from the available financial service providers. Further, the fact that smallholder farmers in Taita Taveta access to finance was low, the farming entrepreneurship activities that smallholder farmers engaged in had not been significantly influenced by access to finance. This was confirmed by the F-test and t- test results for access to finance where the null hypothesis was accepted in both cases leading to the conclusion that access to finance did not have a significant influence on smallholder farming entrepreneurship in Taita Taveta county.

#### **Specific Objective 2: To determine the influence of formal education on Smallholder farming entrepreneurship in Taita Taveta County.**

From the quantitative analysis results (F-test and t-test) and from the qualitative data analysis results that showed most of the respondents to have used their formal education to improve farm enterprise production and farm enterprise profitability and management practices such as farm business, opportunity perception and gross margin analysis, it can be concluded that formal education had a significant influence on the entrepreneurial activities undertaken by smallholder farmers in Taita Taveta county

**Specific Objective 3: To establish the influence of entrepreneurial culture on Smallholder farming entrepreneurship in Taita Taveta County.**

From the results of the study that showed most of the respondents to have viewed self-employed people as innovative, progressive and hardworking and from that fact that most of the respondents showed positive perception on assertive / aggressive people and from the results of the null hypothesis for the entrepreneurial culture, it can be concluded that smallholder farmers in Taita Taveta county exhibited entrepreneurial culture and that entrepreneurial culture significantly influenced the entrepreneurship activities of smallholder farmers in the county.

**Specific Objective 4: To examine the influence of social network on Smallholder farming entrepreneurship in Taita Taveta County.**

From the findings that showed smallholder farmers in Taita Taveta to have had established linkages mainly with input suppliers, marketing agents, business service providers, credit service providers and production support services and further from the results of the null hypothesis for the social network, it can be concluded that the social network established by the smallholder farmers in Taita Taveta county significantly influenced their entrepreneurial activities.

Further, it can be concluded that there is an aging smallholder farming community in Taita Taveta since the majority of the respondents in the study were over 40 years of age. The fact that the majority of the respondents in the study were over 40 years can be concluded to be one of the reason why smallholder farming entrepreneurship is low in Taita Taveta since an aged farming community is slow in undertaking innovative farming activities. From the findings of the study it can also be concluded that other factors other than the ones identified in the study also influence smallholder farming entrepreneurship in Taita Taveta county. This conclusion is supported by the study finding that showed the independent variables of the study (access to finance, formal education, entrepreneurial

culture and social network) to have explained only a fifth of the change in the dependent variable (smallholder farming entrepreneurship).

#### **5.4 Recommendations**

##### **Specific Objective 1: To assess the influence of access to finance on Smallholder farming entrepreneurship in Taita Taveta County.**

To enhance access to finance among smallholder farming entrepreneurs, there is need for financial service providers in the county and in Kenya in general to leverage on technology and innovation to reduce interest rates on credit and other costs associated with financial services. Further, the Taita Taveta county and the country need to put in place appropriate legal frameworks that promote alternative credit securing mechanisms such as group guaranteeing among others that go beyond the traditional collateral mechanisms.

##### **Specific Objective 2: To determine the influence of formal education on Smallholder farming entrepreneurship in Taita Taveta County.**

In order to address the challenge of an aging farming community in Taita Taveta county, the county government need to come up with policy interventions that encourage youth to engage into farming. This policy will go a long way in enhancing smallholder farming entrepreneurship in the county since youth are more receptive to training and technological changes than the older generation and therefore more entrepreneurial.

##### **Specific Objective 3: To establish the influence of entrepreneurial culture on Smallholder farming entrepreneurship in Taita Taveta County.**

From the conclusion that entrepreneurial culture among smallholder farmers in Taita Taveta county is low, there is need for the county government in partnership with the civil society, community based organizations, development partners and all other stakeholders

in agriculture sector and business sector to jointly promote entrepreneurship and entrepreneurial culture among the smallholder farmers and Taita community at large.

**Specific Objective 4: To examine the influence of social network on Smallholder farming entrepreneurship in Taita Taveta County.**

Since the study found social networks to have a significant influence on smallholder farming entrepreneurship, Taita Taveta county government, other county governments as well as the National government need to create the necessary legislative and regulatory frameworks that promote social network platforms among smallholder farming entrepreneurs such as digital platforms, farm input suppliers' platforms among other platforms to enhance entrepreneurship among smallholder farmers.

### **5.5 Areas for Further Research**

This study sort to establish the influence of access to finance, formal education, entrepreneurial culture and social network on smallholder farming entrepreneurship in Taita Taveta county, there is therefore a need for a study on how smallholder farming entrepreneurship is influenced by other factors such as farm size, age of the entrepreneur, marital status, unemployment, quest for financial independence and population of the investment area among others and how they influence smallholder farming entrepreneurship in Taita Taveta county since from the study findings it was clear that there are other factors that influence smallholder farming entrepreneurship in Taita Taveta county other than the ones identified in the study. Further, to corroborate the results of this study, there is need for a study in other counties other than Taita Taveta county on factors influencing smallholder farming entrepreneurship.

There is also a need for a study to find out how the independent variables (access to finance, formal education, entrepreneurial culture and social network) that were used in this study would influence large scale farming entrepreneurship in Taita Taveta county or in any other part of Kenya where large scale farming is practiced. Such a study would help

to find out whether the findings of this study can be generalized to farming entrepreneurship. Further, Studies need to be done to confirm to what extent the same independent variables (access to finance, formal education, entrepreneurial culture and social network) influence entrepreneurship in other sectors other than farming in Taita Taveta County and in other counties in Kenya.

## REFERENCES

- Acs, Z. J., & Szerb, L. (2010). The Global Entrepreneurship Index. *Journal of Foundations and Trends in Entrepreneurship*, 5(5), 341-435.
- Audretsch, D.B., & Keilbach, M.C. (2011). *Handbook of research on innovation and entrepreneurship*. Oxford: Oxford University Press
- Ahmad, N. & Hoffmann, A. N. (2008). *A framework for addressing and measuring entrepreneurship*. Paris: Organization of Economic Cooperation and Development.
- Antonakis, J., & Dietz, J. (2011). Looking for validity or testing it. *Behavioral Research Journal*, 60(2), 290-307
- Amarendra, P. S. (2013). Factors Influencing Entrepreneurship among Farming Community in Uttar Pradesh. *Journal of Arts, Science and Commerce*, 4(3), 114 -118.
- Ansell, C. (2011). *Pragmatist democracy: evolutionary learning as public philosophy*. New York, NY: Oxford University Press.
- Babu, C. R., Abdullahi, A. S., & Abubakar, B. Y. (2010). *Strengthening entrepreneurial capacity of Nigerian Agricultural firms*. Washington, D.C: International Food Policy Institute.
- Bakotic, D., & Kruzic, D. (2010). Students' Perceptions and Intentions Towards Entrepreneurship: The Empirical Findings from Croatia. *The Business Review Journal*, 14(2), 209-215

- Barth, J.R., Caprio G., & Levine, R. (2009). *Rethinking bank regulations*. Cambridge, UK: Cambridge University Press.
- Beckert, J. (2010). How Do Fields Change? The Interrelations of Institutions, Networks, and Cognition in the Dynamics of Markets. *Journal of organizational Studies*, 3(5), 605-627.
- Beck, T., Demirguc, A. K., & Martinez, S. P. (2010). *Banking services for everyone? Barriers to Bank access and use around the world*. Washington, DC: World Bank.
- Benzing, C. & Chu, H.M. (2009). A Comparison of the Motivations of Small Business Owners in Africa. *Journal of Small Business and Enterprise Development*, 16(1), 60-77.
- Binswanger, M. H. P., McCalla, A. F., & Patel, P. (2010). Structural Transformation and African Agriculture. *Journal of Emerging Market Economies*, 2(6), 113–122.
- Block, J., & Sander, P. (2010). Necessity and Opportunity Entrepreneurs and their Duration in Self-employment. *Journal of Industry, Competition, and Trade*, 9(2), 117- 37.
- Botazzi, L., Da Rin, M. Y., & Hellmann, T. (2010). *The importance of trust for investment: Evidence from venture capital*. Brussels: European Corporate Governance Institute of Belgium.
- Bruton, G. D.; Ahlstrom, D., & Obloj, K. (2008). Entrepreneurship in Emerging Economies: Where are we Today and where should the Research go in the Future. *Entrepreneurship Theory and Practice*, 32(1), 1-14.
- Bula, H.O. (2012). Evolution and Theories of Entrepreneurship: A Critical Review on the Kenyan Perspective. *International Journal of Business and Commerce*, 1(11), 81-96.



- Burch, P., & Carolyn, J. H. (2016). *Mixed-methods for policy research and program valuation*. Thousand Oaks, CA: Sage Publications.
- Bwisa, H. M. (2013). *Youth entrepreneurship in africa: Sowing the seeds*. Saarbrücken, Germany: Lambert Academic Publishing.
- Cardarelli, R., Elekdag, S., Lall, S. (2009). *Financial stress, downturns, and recoveries*. Washington, DC: International Monetary Fund.
- Carter, S., Alsos, G., Ljunggren, E., & Welter, F. (2011). *Handbook of research on entrepreneurship in agriculture and rural development*. New Delhi: Edward Elgar Publishers.
- Chakravorti, B. (2010). The New Rules for Bringing Innovations to Markets. *Harvard Business Review*, 5(3), 145-162.
- Chen, X., Zou, H., & Wang, D. (2009). How do New Ventures Grow? Firm Capabilities, Growth Strategies and Performance. *International Journal of Research in Marketing*, 26, (4), 294-303.
- Chidzero, A., Ellis, K., & Kumar A. (2009). *Indicators of access to finance: Comparisons of data from six countries*. Washington DC: Brookings Institute
- Christina, G. (2013). *Promising agribusiness*. Bonn: Ute Lange Tulpenfield Media affairs.
- Clark, J. (2009). Entrepreneurship and Diversification on English farms: Identifying Business Enterprise Characteristics and Change Processes. *Journal of Entrepreneurship & Regional Development*, 21(4), 213-236.
- Cochran, T. (1960). Cultural Factors in Economic Growth. *Journal of Economic History*, 20(6), 515-530.

- County Government of Taita Taveta, (2013). *First taita taveta county intergrated development plan*. Wundanyi: County Government of Taita Taveta.
- Couzy, C., & Dockes, A. C. (2008). Are Farmers Business People? Highlighting Transformations in the Profession of Farmers in France. *International Journal of Entrepreneurial Behaviour and Research*, 6(3), 407-420.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and Mixed Methods Approaches* (4<sup>th</sup> ed). Thousand Oaks, CA: Sage Publications.
- Creswell, J. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4<sup>th</sup> ed). Upper Saddle River, NJ: Pearson Education.
- Creswell, J. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3<sup>rd</sup> ed). Upper Saddle River, NJ: Pearson Education.
- Cripps, F. (2015). *Global policy model: Data bank update and model extension*. Geneva: ILO.
- David, K. (2012). *Entrepreneurship in farming*. Rome: FAO Publishers.
- Davidsson, P. (2008). *The entrepreneurship research challenge*. Cheltenham UK: Edward Elgar
- De Mel, S., McKenzie, D., & Woodruff, C. (2008). Returns to Capital in Microenterprises: Evidence from a Field Experiment. *Quarterly Journal of Economics*, 123 (4), 1329-1372.
- Dominguez, S. (2014). *Mixed methods social networks research*. Cambridge: Cambridge University Press.

- Donna, K. (2014). *Global entrepreneurship monitor: United states profile*. Babson: Babson College.
- Ebben, J. J. (2008). Bootstrapping and the Financial Conditions of Small Firms. *International Journal of Entrepreneurial Behavior & Research*, 15(21), 346-363.
- Ekkehard, E., Christian, V., & Steven, K. (2014). *The global employment trends*. Geneva: ILO.
- Etriya, P., Victor, S., Emie, W., & Onno, O. (2012). *Exploring factors related to entrepreneurial orientation and innovation capacity of farm firms: A lesson from vegetable farmers in west java, indonesia*. Wageningen: Wageningen University.
- Foster, L., Haltiwanger, J., & Syverson, C. (2008). Reallocation, Firm Turnover, and Efficiency: Selection on Productivity or Profitability? *American Economic Review*, 98, 394-425.
- Freytag, A., & Thurik, R. (2010). *Entrepreneurship and culture*. Heidelberg: Springer Publishing.
- Friday, O. (2009). The value of Creativity and Innovation in Entrepreneurship: *Journal of Asia Entrepreneurship and Sustainability*, 3(2), 124-140.
- Fritsch, M. (2011). *The effect of new business formation on regional development: Interpretation, and avenues for further research*. Jena, Germany: Friedrich Schiller University.
- Gartner, W. B., & Bellamy, M. G. (2009). *Creating the enterprise*. Atlanta: Thompson Inc.

- Gasparini, L., Gutierrez, F., Porto, G., Tamola, A., & Tornarolli, L.(2009). *Finance and credit variables in household surveys of developing countries*. Washington, DC: World Bank.
- GEM Report. (2011). *Entrepreneurs and entrepreneurial employees across the globe*. Wellesley, MA: Babson College.
- Gorard, S. (2013). *Research design: Creating robust approaches for the social sciences*. Thousand Oaks, CA: Sage Publications.
- Grande, J., & Madsen, E. (2011). The Relationship between Resources, Entrepreneurial Orientation and Performance in Farm based Ventures. *Journal of Entrepreneurship and Regional Development*, 23(4), 89-111.
- Grilo, I., & Thurik, A.R. (2008). Determinants of Entrepreneurial Engagement levels in Europe and the US. *Industrial and Corporate Change*, 17(6), 1113- 1145.
- Guest, G. (2012). *Applied thematic analysis*. Thousand Oaks, CA: Sage Publications.
- Gutek, G. (2014). *Philosophical, ideological, and theoretical perspectives on education*. New Jersey, NJ: Pearson publishers
- Hagen, E.E., (1962). *The theory of social change*. Homewood, CA: Dorsey Press.
- Haugh, H. (2009). New Strategies for a Sustainable Society: The Growing Contribution of Social Entrepreneurship. *Business Ethics Quarterly*, 17(4), 743-749.
- He, X. (2009). The Development of Entrepreneurship and Private Enterprise in the People's Republic of China and its Relevance to Transitional Economies. *Journal of Development Entrepreneurship*, 14(1), 39-58.

- Henrekson, M., & Sanandaji, T. (2010). *The interaction of entrepreneurship and institutions*. Stockholm: Research Institute of Industrial Economics.
- Hesse, B., & Sharlene, N. (2010). *Mixed- methods research: Merging theory with practice*. New York: Guilford Press.
- Higgs, H. (1931). *Life and work of richard cantillon*. London: Frank Cass.
- Hildenbrand, B., & Hennon, C. B. (2008). Beyond the Concept of Getting Big or Getting Out: Entrepreneurship Strategies to Survive as a Farm Family. *International Journal of Entrepreneurship and Small Business*, 6(5), 470-495.
- Hofstede, G. J., & Minkov, M. (2010). *Cultures and organisations: Software of the mind* (3<sup>rd</sup> ed.). Columbus, OH: McGraw Hill.
- Hussain, D., & Windsperger, J. (2010). Multi-unit Ownership Strategy in Franchising: Development of an Integrative Model. *Journal of Marketing Channels*, 17(1), 3-31.
- IEA. (2016). *Youth unemployment in Kenya*. Nairobi: IEA
- IFAD. (2016). *Rural poverty in kenya*. Rome: IFAD
- IMF, (2013). *World economic outlook: Transitions and tensions*. Washington, DC: IMF
- Jaeger, P. (2010). *Smallholders: A Seminar Paper on How to Involve Small-Scale Farmers in Commercial Horticulture*. Accord Associates LLP.
- Joseph, F., Ntale, K., Litondo O. (2013). Determinants of Commercial Mixed Farming on Small Farms in Kenya. *European Journal of Business and Management*, 5(5), 146-155.

- Kamisan, G., & Kamal, Y. Y. (2009). The Influence of Personality and Socio Economic Factors on Female Entrepreneurship Motivations in Malaysia. *Journal of International Review of Business Research*, 5(1), 149-162.
- Kanyari, W. J., & Namusonge, G. S. (2013). Factors that Influence the Kenyan Youth Entrepreneurs Towards the Youth Enterprise Development Fund: A Case Study of Gatundu South District, Kenya. *International Journal of Education and Research*, 1(5), 123-131.
- Kanyi, B. N. (2015). *Factors influencing the opportunity exploitation by entrepreneurial tree farmers in lari district of kiambu county, kenya*. Nairobi: Kenyatta University.
- Kapsos, S., & Bourmpoula, E. (2013). *Employment and economic class in the developing world*. Geneva: International Labour Organization.
- KARI., & ASDSP. (2014). *Taita taveta household baseline survey*. Nairobi: KARI Printers.
- KARI., & ASDSP. (2014). *Taita taveta agri-business baseline survey*. Nairobi: KARI Printers.
- Kari, M., & Jarkko, P. (2008). *Understanding entrepreneurial skills in the farm context*. Geneva: Research Institute of Organic Agriculture.
- Kearney, C., Hisrich, R. & Roche, F. (2009). Public and Private sector entrepreneurship: Similarities, Differences or a combination? *Journal of Small Business and Enterprise Development*, 16(1), 26-46.
- Kelemen, M. & Rumens, N. (2009). *An introduction to critical management research*. Thousand Oaks, CA: Sage publications.

- Kerr, W., & Nanda R. (2009a). Democratizing entry: Banking Deregulation, Financing Constraints, and Entrepreneurship. *Journal of Financial Economics*, (10) 4, 145-151.
- KIM. (2009). *Fundamental of management research methods*. Nairobi: Macmillan Kenya Publishers.
- KIPPRA. (2013), *Kenya economic review*. Nairobi: KIPPRA Printers. Kothari, C.R., & Garg, G. (2014). *Research methodology: Methods and techniques*. New Delhi: New Age international publishers limited.
- Kwabena, N.S. (2011). Entrepreneurship Theories and Empirical Research: A Summary Review of the Literature. *European Journal of Business and Management*, 3(6), 156-185.
- Kumar, S. (2008). Promoting entrepreneurship. *Small Business and Entrepreneurship*, 7(5), 48-61.
- Landstrom, H. (2010). *Pioneers in entrepreneurship and small business research: International studies in entrepreneurship Series* (8<sup>th</sup> Ed). New York: Springer Publishing.
- Lesibana, M. V. (2014). *Participation by smallholder farming entrepreneurs in entrepreneurship and agro-processing activities in South Africa*. Johannesburg: University of Witwatersrand.
- Levent, A. (2008). The relationship between an Entrepreneurs's Culture and the Entrepreneurial Behaviour of the Firm. *Journal of Small Business and Enterprise Development*, 15(1), 111 – 129.

- Magruder J. R. (2012). High Unemployment yet Few Small Firms: The Role of centralization in South Africa. *American Economic Journal of Applied Economics*, 4(3), 138– 66.
- Maina M., Francis W., Walter W., Gidraph N., & Dalton N. (2014). Using Open Education Resource as a Tool for Agribusiness Management Training for Hard to Reach Rural Farmer Populations. *Journal of Asynchronous Learning Networks*, 17(2), 156-169.
- Mandam, L. S. (2010). *Entrepreneurship development and nigerian transformation process: Prospects and challenges in agriculture*. Lagos: Farm Management Association of Nigeria.
- Mark, H. (2014). *Global entrepreneurship monitor: Singapore profile*. Aston: Aston University.
- Mbam, B. N., & Nwibo, S. U. (2013). Entrepreneurship Development as a Strategy for Poverty Alleviation among Farming Households in Igbo-Eze North Local Government Area of Enugu State. *Nigeria Greener Journal of Agricultural Sciences*, 3 (10), 736-742.
- McClelland, D. (1971). *The achievement motive in economic growth, in entrepreneurship and economic development* . New York: The Free Press.
- McDonald, J. R. (2008). *Factors impacting innovative activity in western canadian food production farms*. Saskatchewan: Saskatoon University of Saskatchewan.
- McElwee, G. (2008). Taxonomy of Entrepreneurial Farmers. *International Journal of Entrepreneurship and Small Business*, 6(3), 465-478.



- McElwee, G., & Bosworth, G. (2010). Exploring the Strategic Skills of Farmers Across a Typology of Farm Diversification Approaches. *Journal of Farm Management*, 13(12), 819-838.
- McMillan, M., & Rodrik, D. (2011). *Globalization, structural change, and productivity growth*. Cambridge, MA: National Bureau of Economic Research.
- Mohd R. M., Muhammad H. A., Noorliza K., & Anees J. A. (2010). Smallholder Farmers and Factors that Motivate them Towards Agricultural entrepreneurship Activities. *Journal of Agribusiness Marketing*, 5 (45): 47- 60.
- Moraima, H., José, M., Bo, C., & Kalle, L. (2013). Networking: A Critical Success Factor for Entrepreneurship. *American Journal of Management*, 13(2), 59- 64.
- Morgan, S. L., Marsden, T., & Miele, M. (2010). Agricultural Multi-functionality and Farmers' Entrepreneurial Skills: A study of Tuscan and Welsh Farmers. *Journal of Rural Studies*, 26(2), 116-129.
- Mudiwa, B. (2017). An Analysis of Collective Entrepreneurship of Smallholder Farmers in Zimbabwe. *International Journal of Advanced Multidisciplinary Research*, 4(6), 36-44.
- Mugenda, G.A. (2011). *Social science research: Theory and principles*. Nairobi: Kijabe Printing Press.
- Mwaluko, D. K. (2012). *Influence of micro-finance institutions on entrepreneurial growth of small scale businesses in taita taveta county, kenya*. Nairobi: niversityof Nairobi.

- Mwangi, J. M., Bwisa, H. (2013). Challenges facing entrepreneurs in accessing credit: A case of youth entrepreneurs in Makuyu, Kenya. *Prime Journal of Business Administration and Management*. 3(10), 1232-1238.
- Mwangi, M. M. A., & Ngugi, K. (2014). Influence of Entrepreneurial Orientation on Growth of Micro and Small Enterprises in Kerugoya, Kenya. *European Journal of Business Management*, 1 (11), 417-438.
- Nachmias, C.F., & Nachmias, D. (2008). *Research methods in the social sciences* (5<sup>th</sup> Ed). London: St. Martin's Press.
- Naude, w., Gries, T., Wood, E., & Meintjies, A. (2008). Regional Determinants of Entrepreneurial Start-ups in a Developing Country. *Journal of Entrepreneurial and Regional Development*, 7(4), 111-124.
- Neyole, J. W., Bwisa, H. M. (2015). Factors Influencing Entrepreneurial Behavior Among Farmers A Case Of Cabbage Farmers in Kiminini Ward. *International Journal of Technology Enhancements and Emerging Engineering*, 3(9), 143.
- Ngugi, J.K. (2013). Influence of Intellectual Capital on the Growth of Small and Medium *European Journal of Business Management*, 2 (8), 256-263.
- Niglas, K. (2009). How the Novice Researcher Can Make Sense of Mixed- Method Design. *International Journal of Multiple Research Approaches*, 3 (4), 34- 46.
- Nwibo, S., & Okarie, A. (2013). Determinants of Entrepreneurship Among Agribusiness Investors in South-East Nigeria. *European Journal of Business and Management*, 5(10), 198-201.
- OECD, (2009). *The sources of economic growth in OECD countries*. Paris: OECD.
- Oluremi, H. A., & Agboola, G. M. (2011). Environmental Factors and'

- Entrepreneurship Development in Nigeria. *Journal of Sustainable Development in Africa*, 13(4), 78-85.
- Odhiambo, R., Mwita, P., Kihoro, J., Mwalili, S., Waititu, A., Orwa, G., Mung'atu, J., & Mugo, C. (2010). *Basic statistics with practical examples in SPSS*. Nairobi: JKUAT.
- Ogundele, O. J. K. (2010). *Partnership for developing indigenous technology for economic self-reliance*. Lagos: Lagos University Press.
- Okpara, F. O. (2010). *The practice of entrepreneurship*. Enugu: precision Publishers Ltd.
- Paravisini, D. (2008). Local bank financial constraints and Firm Access to External Finance. *Journal of Finance*, 63 (5), 2161-2193.
- Pathak, R.D. (2008). Grass-root Creativity, Innovation, Entrepreneurialism and Poverty Reduction. *International Journal Entrepreneurship and Innovation Management*, 8(1), 87-98.
- Paula, L. (2010). Community-level Entrepreneurial Activities: A Case study from Rural Kenya. *International Journal of Business and Public Management*, 1(1), 223-231
- Potter, J. (2010). *Entrepreneurship and higher education*. Paris: OECD Publishing.
- Ralston, S. (2013). *Philosophical pragmatism and international relations: essays for a bold new world*. New York, NY: Lexington.
- Republic of Kenya. (2010). *Agriculture development strategy 2010-2020*. Nairobi: Government Printers.

- Republic of Kenya. (2014). *County fiscal strategy paper: social and economic empowerment of the people of taita taveta county*. Wundanyi: Taita Printers.
- Richard, F., Charlotta, M., Kevin, S., Kimberly, S., Zara, M., & Michelle, H. (2014). *Creativity and prosperity: The global creativity index*. Toronto: The Martin Prosperity Institute.
- Rodney, W. (2009). *How europe underdeveloped africa*. Abuja: Panaf Press.
- Rowlands, B. (2009). Grounded in Practice: Using Interpretive Research to Build Theory. *The Electronic Journal of Business Research Methodology*, 3(1), 81–92.
- Rudmann, C. (2008). *Entrepreneurial skills and their role in enhancing the relative independence of farmers*. Frick, Switzerland: Research Institute of Organic Agriculture.
- Stephan, U., & Uhlaner, L.M. (2010). Performance-based vs. Socially Supportive Culture: A Cross National Study of Descriptive Norms and Entrepreneurship. *Journal of International Business Studies*, 41(8), 347-364.
- Saldana, J. (2009). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage Publications.
- Samuel, G., Mukulu, E., & Odhiambo, R. (2019). Influence of Access to Entrepreneurial Finance and Performance of Coffee Smallholders' Micro and Small Agribusinesses in Murang'a County, Kenya. *Journal of Entrepreneurship and Project Management*, 3(2), 17-34.
- Sanchez, J.C. (2010a). University Training for Entrepreneurial Competencies: Its Impact on Intention of Venture Creation. *International Entrepreneurship and Management Journal*, 4(3), 1-16.


- Sattar, S. (2012). *Opportunities for men and women: Emerging europe and central Asia*. Washington, DC: World Bank.
- Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research methods for business students*. Essex, England: Pearson Education Limited
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Essex, England: Pearson Education Limited.
- Schallenkamp, K., & Smith, W. L. (2008). Entrepreneurial Skills Assessment. *International Journal of Management and Enterprise Development*, 5(1), 18-29.
- Schumpeter, J., A. (1989). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. Cambridge: Harvard University Press.
- Schumpeter, J., A. (1983). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. New Brunswick: Transaction Books.
- Sena, V., Scott, J. and Roper, S. (2010). Gender, Borrowing Patterns and Self employment: Some Evidence for England. *Journal of Small Business Economics*, I (10), 70-80.
- Sharma, M., Tiwari, R., & Sharma, J. (2010). *Entrepreneurship in livestock and agriculture*. New Delhi: CBS Publishers & Distributors.
- Shieh, G. (2010). Misconception of Multicollinearity. *Behavioral Research Journal*, 45(5), 483-507.

- Stefanovic, I., Prokic, S., & Rankovic, L. (2010). Motivational and Success Factors of Entrepreneurs: The Evidence from a Developing Country. *Journal of International Business Studies*, 28(2), 251-269.
- Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences*. New York, NY: Routledge.
- Subrahmanya, M. H., Mathirajan, M., & Krishnaswamy K. N. (2010). *Importance of innovation for SME growth*. Maastricht, Netherlands: Maastricht Economic and Social Research and Training Centre on Innovation and Technology.
- Ucbasaran, D., Westhead, P., & Wright, M. (2009). The Extent and Nature of *Venturing*, 24, 99–115.
- N.o.N, & ASDSP. (2014). *Taita taveta agribusiness baseline survey*. Nairobi: University Of Nairobi Publishers.
- Thompson, E. R. (2009). Individual Entrepreneurial Intent: Construct Clarification and Development of an International Reliable Metric. *Journal of Entrepreneurship Theory and Practice*. 33(3), 669-694.
- Tornikoski, E., & Newbert, S. L. (2009). *Networks, networking activity, and Organizational emergence*. Wellesley, MA: Babson College.
- Tulloch, Z. (2010). *Capital constraints to entrepreneurial start-ups in south africa's emerging agribusiness industry*. Pretoria: University of Pretoria.
- Tung, R. L., Walls, J., & Frese, M. (2010). *Cross cultural entrepreneurship: the case of china*. The Mahwah, N.J.: Lawrence Erlbaum Associates Publishers.

- Van der Sluis, J., Van Praag, M., & Vijverberg, W. (2009). Entrepreneurship Selection And Performance: A Meta-Analysis of the Impact of Education in Developing Economies. *World Bank Economic Review*, 19 (2), 225-261
- Vogt, W. P., Dianna C. G., & Lynne M. H. (2012). *When to use what research design*. New York: Guilford Press.
- Wade, M. S. (2010). The model farms of the Victorian Countryside. *Journal of the Victorian Society*, (4)34, 4-8.
- Weber, E. T. (2013). *Democracy and leadership: on pragmatism and virtue*. New York, NY: Lexington Books.
- World Bank. (2015). *Major hurdles remain in the goal to end poverty by 2030*. Washington, D.C: World Bank.
- Zafir, M. M., & Fazilah, M. H. (2011). Entrepreneurial Success: An Exploratory Study Among Entrepreneurs. *International Journal of Business and Management*, 6(1), 116-125.
- Zahurul, A. (2013). *Success factors of entrepreneurs of small and medium sized enterprises:evidence from Bangladesh*. Chittagong: University of Chittagong.

## APPENDICES

### Appendix I: Board of Postgraduate Studies Approval Letter

  
**JOMO KENYATTA UNIVERSITY  
OF  
AGRICULTURE AND TECHNOLOGY**  
DIRECTOR, BOARD OF POSTGRADUATE STUDIES

JOMO KENYATTA UNIVERSITY OF AGRICULTURE  
AND TECHNOLOGY  
P.O. BOX 62000-00200 NAIROBI  
**27 SEP 2017**  
RECEIVED  
SCHOOL OF ENTREPRENEURSHIP, MANAGEMENT  
AND FINANCE

P.O. BOX 62000  
NAIROBI – 00200  
KENYA  
Email: [director@bps.jkuat.ac.ke](mailto:director@bps.jkuat.ac.ke)

TEL: 254-067-52711/52181(6114)  
FAX: 254-067-52164/52030  
Mobile:0708-602225

---

REF BPS/ HD413-2541/2012 21<sup>ST</sup> SEPTEMBER, 2017


**COSMAS NGUTA MUNYEKE**  
C/o SEPM  
**JKUAT**

Dear Mr. Munyeke,


**RE: APPROVAL OF RESEARCH PROPOSAL AND SUPERVISORS**

Kindly note that your PhD. research proposal entitled: “FACTORS INFLUENCING SMALLHOLDER FARMING ENTREPRENEURSHIP IN TAITA TAVETA COUNTY, KENYA” has been approved by the Board of Postgraduate Studies. The following are your approved supervisors:-

1. Prof. Elegwa Mukulu
2. Prof. Willy Muturi

  
**PROF. MATHEW KINYANJUI**  
**DIRECTOR, BOARD OF POSTGRADUATE STUDIES**  
Copy to: Dean, SEPM

---

  
JKUAT is ISO 9001:2008 certified  
Setting Trends in Higher Education, Research and Innovation



## Appendix II: Questionnaire

### FACTORS INFLUENCING SMALLHOLDER FARMING ENTREPRENEURSHIP IN TAITA TAVETA COUNTY

#### PART A

##### Background information

Please tick (√) for the appropriate response where applicable.

1. Category of Smallholder Farmer

- |                        |     |  |     |
|------------------------|-----|--|-----|
| a) Dairy farmer        | [ ] | d) Vegetable farmer                        | [ ] |
| b) banana farmer       | [ ] | e) Drought resistant crops/local livestock |     |
| c) Onion/tomato farmer | [ ] | farmer                                     | [ ] |

2. Gender

- |           |     |         |     |
|-----------|-----|---------|-----|
| a) Female | [ ] | b) Male | [ ] |
|-----------|-----|---------|-----|

3. Age in years :

- |          |     |             |     |
|----------|-----|-------------|-----|
| a) 20-30 | [ ] | d) 51-60    | [ ] |
| b) 31-40 | [ ] | e) 61-70    | [ ] |
| f) 41-50 | [ ] | g) above 70 | [ ] |

4. Level of education

- |                    |     |              |     |
|--------------------|-----|--------------|-----|
| a) Primary         | [ ] | d) Secondary | [ ] |
| b) Diploma         | [ ] | e) Degree    | [ ] |
| c) Other (specify) | [ ] |              |     |

## PART B

### Section I: Smallholder Farming Entrepreneurship

*(Diversification, Use of new technologies, Specialty production, Provision of services to other farmers, Farm tourism, Innovative market practices)*

1. The following are statements about smallholder farming entrepreneurship. Please react to them on a five point scale in the levels of **Strongly Agree (SA)-5, Agree (A)-4, Undecided (UN)-3, Disagree (DA)-2, or Strongly Disagree (SDA)-1** regarding their applicability in your Smallholder farm.

Statement	Response				
	SA	A	UN	DA	SD
	5	4	3	2	1
I have several farming activities in this farm					
I use modern farm machinery					
Agro vet is always the source of my planting seeds					
I use fertilizers all the time					
I use pesticides and insecticides all the time					
I have found a new source for my farm inputs(seeds, fertilizers, chemicals)					
I always consult with Agricultural experts					
I often exhibit in trade fairs and shows					
My farming techniques are always different from my neighbours'					
I have found market for all my products					
I have signed market contracts with my buyers					
I have products that are not found among my neighbours					
I often provide extension services to other farmers for a pay					
Other farmers make study visits to my farm for a pay					
I sell my products in a packaged form					
I sell value added products from my farm					

2. Among the listed entrepreneurial farming techniques please tick those that apply in your farm

(Contract farming; Diversification; provision of extension services to other farmers; on farm value addition/ processing; use of new crop cultivars; keeping of modern livestock breeds; production of specialty crops, any other (please specify)

**Section II: Access to Finance**

*(Credit worthiness, Amount of credit applied for, Amount of credit acquired, Availability of financial service providers).*

1. The following are statements about access to finance and smallholder farming entrepreneurship. Please react to them on a five point scale in the levels of: **Strongly Agree (SA)-5, Agree (A)-4, Undecided (UN)-3, Disagree (DA)-2, or Strongly Disagree (SDA)-1**

regarding their applicability in your farm.

Statement	Response				
	SDA	DA	UN	A	SA
	1	2	3	4	5
Addition of more enterprises in Farm need external financing					
Acquisition of farm inputs require financing					
Financing is needed to discover new sources of farm inputs					
Implementation of new farm practices require financing					
Financing facilitate marketing of the farm products.					
Acquisition of new technologies need financing					
Financial service providers with suitable financial products are available					
I meet all the collateral conditions of the financial service providers					
I am satisfied with the interest rate offered by the financial service providers					
I always access credit whenever I need it					
The time taken by the financial service providers to process my credit is acceptable					
I often get credit for my farm operations					

2. In your opinion how can access to finance be improved to enhance smallholder farming entrepreneurship?

(Lowering of the cost of credit, through more friendly credit products e.g. group guaranteeing, use of alternative collaterals such as sales, any other (specify)

**Section III: Education and smallholder farming entrepreneurship.**

*(Standard seven/eight certificate, Form four/six certificate, University/College certificate).*

1. Below are some statements about formal education. Please react to them on a five point scale in the levels of; **Strongly Agree (SA)-5, Agree (A)-4, Undecided (UN)-3, Disagree (DA)-2, or Strongly Disagree (SDA)-1** regarding their applicability in your farm.

Statement	Response				
	SA	A	UN	DA	SD
	5	4	3	2	1
Education is vital for diversification in the farm					
Understanding of new farming technologies need education					
I need education to do value addition					
Discovery of new sources of farm inputs need education					
I will discover more markets for my products if I have more education					
Education enhances market contracting					
I need education to understand and use digital marketing platforms					
I need education to train other farmers					
Growing of specialty products require educated farmers					
Education can facilitate farming differently and better					

#### Section IV: Entrepreneurial culture and Smallholder farming entrepreneurship

*[Culture is about community perception as regards creativity, risk taking behaviors, Aggressive behaviours, independence (self-employment, entrepreneurs (social recognition))]*

2. The following are statements about cultural practices that influence smallholder farming entrepreneurship. Please react to them on a five-point scale in the levels of; **Strongly Agree (SA)-5, Agree (A)-4, Undecided (UN)-3, Disagree (DA)-2, or Strongly Disagree (SDA)-1** regarding their applicability in your farm/community

Statement	Response				
	SA	A	UN	D	SD
	1	2	3	4	5
aggressiveness in behavior is needed for discovery of new sources of farm inputs					
Desire to for independence lead to farm diversification.					
Creativity is needed to practice farm tourism.					
Production of specialty products is about risk taking					
Innovative practices in the farm will make the farmer gain recognition in the community.					
Individuals who act aggressively are admired.					
People who are self-employed are respected					
Most of the people in this community are self employed					
There are many people undertaking unique farming activities in this community.					
People in this community are always trying new things					
My community favourably compete with other communities					

**Section V: Social network and Smallholder farming entrepreneurship**

*(Connection/linkage/relations with: Other entrepreneurs, Credit service providers, Business development services, input suppliers, marketing agents etc.)*

2. The following are statements about Network that influence smallholder farming entrepreneurship. Please react to them on a five-point scale in the levels of; **Strongly Agree (SA)-5, Agree (A)-4, Undecided (UN)-3, Disagree (DA)-2, or Strongly Disagree (SDA)-1** regarding their applicability in your farm

Statement.	Response				
	SA	A	UN	DA	SD
	5	4	3	2	1
Connections facilitate acquisition of finances					
Linkages helps discover new sources of farm inputs					
New markets can be established through connections					
Linkages promote acquisition of new farming technologies					
Introduction of new farming practices require networking with other farmers					
I always visit other farmers outside my sub-county					
I often attend agricultural stakeholders meetings					
I have contacts of most of the Agricultural stakeholders in the county					
I am a member of a producer group/ common interest group					
I often attend trade fairs and shows					
As a farmer, I know my role model					
Whenever I am not sure about something in my farming activities, I know who to consult					
I often attend meetings with other farmers					

## **Appendix III: Interview Guide**

### **Smallholder Farming entrepreneurship**

1. How have you undertaken diversification in your farm?
2. How have you undertaken specialty production?
3. What services do you provide to other farmers?
4. How do you market your farm products?

### **Access to Finance**

1. How much credit have you applied for your farm activities in the last three years?
2. How much credit have you acquired for your farm activities in the last three years?

### **Formal Education**

1. How do you use the formal education acquired in your farming entrepreneurship?
2. What improvements in the education system could enhance entrepreneurship?

### **Social Network**

1. What linkages have you established with business service providers?


2. What connections have you made with financial service providers?
3. How are you collaborating with other farmers in and outside this county?

### **Entrepreneurial Culture**

1. How are self-employed individuals regarded by the community?
3. How does the community view assertive and aggressive members?
4. To what extent do people in this community try new things?



## Appendix IV: Research Authorization by Nacosti



**NATIONAL COMMISSION FOR SCIENCE,  
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,  
2241349, 3310571, 2219420  
Fax: +254-20-318245, 318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

NACOSTI, Upper Kabete  
Off Waiyaki Way  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No **NACOSTI/P/17/61545/20221** Date: **27<sup>th</sup> November, 2017**

Cosmas Nguta Munyeke  
Jomo Kenyatta University of  
Agriculture & Technology  
P.O. Box 62000-00200  
NAIROBI.

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Factors influencing smallholder farming entrepreneurship in Taita Taveta County, Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Taita-Taveta County** for the period ending **24<sup>th</sup> November, 2018**.

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

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

*GP Kalerwa*  
**GODFREY P. KALERWA MSc., MBA, MKIM**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Taita-Taveta County.

The County Director of Education  
Taita-Taveta County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

## Appendix V: Letter from the County Director of Agriculture Taita Taveta

### COUNTY GOVERNMENT OF TAITA TAVETA



### STATE DEPARTMENT OF AGRICULTURE

---

Telegrams:  
Telephone: 020 2025100,  
E-mail address: taitatavetacda@yahoo.com  
*When replying, please quote ref & date.*


County Director of Agriculture,  
Taita Taveta County.  
P.O. Box 1035  
**WUNDANYI**  
15<sup>th</sup> Dec. 2017

**REF: CDA/T-TVT/W.F.D/1/VOL.1/43**

To Sub-County Directors of Agriculture  
(Voi, Mwatate, Wundanyi and Taveta)

**RE: Data Collection on a Study on Factors Influencing Smallholder Farming  
Entrepreneurship in Taita Taveta County**

This is to introduce to you Mr Cosmas N. Munyeke who wishes to undertake data collection for the above said study. The information from this study will be useful in promotion of entrepreneurship among smallholder farmers in our County. Kindly facilitate him to get all the information he requires from our farmers.

  
Ms Ruth Milela  
For: County Director of Agriculture  
Taita Taveta County