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**FACTORS INFLUENCING THE PARTICIPATION OF YOUTH IN
AGRIBUSINESS IN KIAMBU AND MACHAKOS TOWNS IN KENYA**

MULLU LORRAINE MUTINDA

MDF/077930/2018



**A RESEARCH THESIS SUBMITTED TO THE MASTERS OF SCIENCE IN
DEVELOPMENT FINANCE (MDF) PROGRAM IN PARTIAL FULFILMENT OF
THE DEGREE OF MASTERS OF SCIENCE IN DEVELOPMENT FINANCE OF
STRATHMORE UNIVERSITY BUSINESS SCHOOL.**

JUNE 2023

DECLARATION

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

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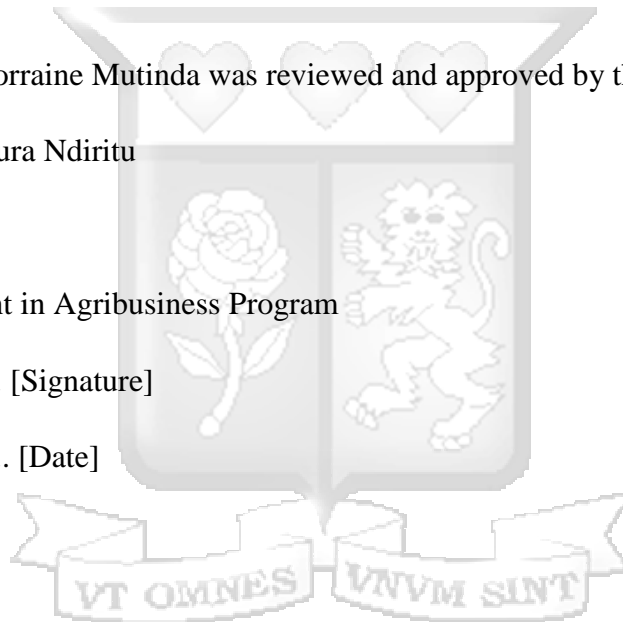
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ABSTRACT

Despite the high levels of unemployment, the youth rarely exploit opportunities in the agribusiness sector due to preconceived misconceptions and negative perceptions of agriculture as a career choice. However, agriculture is a significant contributor to the country's economic development and the participation of the youth in the sector would surely play a significant role in easing the income challenges faced by the youth. To this end, the research sought to examine the factors that influence the participation of the youth in agribusiness activities. Specifically, the examination focused on the effect of market factors, technological factors, government factors and socioeconomic factors on the participation of the youth in agribusiness. The theoretical scope of the research was limited to the Push-Pull Theory and the Theory of Planned Behavior, which are relevant to the study. The research adopted a descriptive research design. The population of the research was 1,289,820 youth members drawn from both Kiambu and Machakos Counties. The study adopted convenience random sampling in the selection of the research participants, who were determined using the Krejcie and Morgan table. A sample of 384 youth members was selected, and the participants were apportioned across the two counties. Data was collected through structured questionnaires with focus interviews conducted with key informants in the agribusiness field. Data analysis was done using the SPSS software. The research implemented descriptive and inferential statistics in the analysis. The research further applied content analysis to review the qualitative research data within the study objectives. The analyzed research data was presented through pie charts, tables and graphs. Out of the response being sought in the study, the research was able to garner a 97% response rate which was deemed adequate for quantitative analysis. Overall regression analysis revealed that market factors have no statistically significant effect on youth participation in agribusiness, technology factors have a positive and significant effect on youth participation in agribusiness, socioeconomic factors a positive and significant effect on youth participation in agribusiness, and demographic factors have a significant relationship with youth participation in agribusiness in Kiambu and Machakos town. Regression results were that there was no statistically significant effect of market factors have no significant effect on youth participation in agribusiness. Findings led to the conclusion that technology factors and socioeconomic factors have a statistically significant effect on youth participation in agribusiness. Further, the study found that demographic factors such as gender, employment status, age and level of income have insignificant impacts on youth's participation in agribusiness. On the other hand, the size of the household and the academic achievement of the youth were determined to have significant influences on the likelihood of participating in agribusiness. The study findings provide evidence that the youth are highly enthusiastic and motivated to participate in agribusinesses and that under the right conditions, more youth will get involved in the country's biggest income earner. The study further calls on the inclusion of agricultural programs in schools from an early age to ensure the citizenship recognizes agriculture as a viable business activity from a young age. Another recommendation is for increased marketing and financing of agribusiness as a vital component of the economy to increase its attractiveness to foreign investors who can bring in newer farming methods, technologies and expertise.

Key words: *Market factors, technological factors, socioeconomic factors, Youth in agribusiness*

TABLE OF CONTENTS

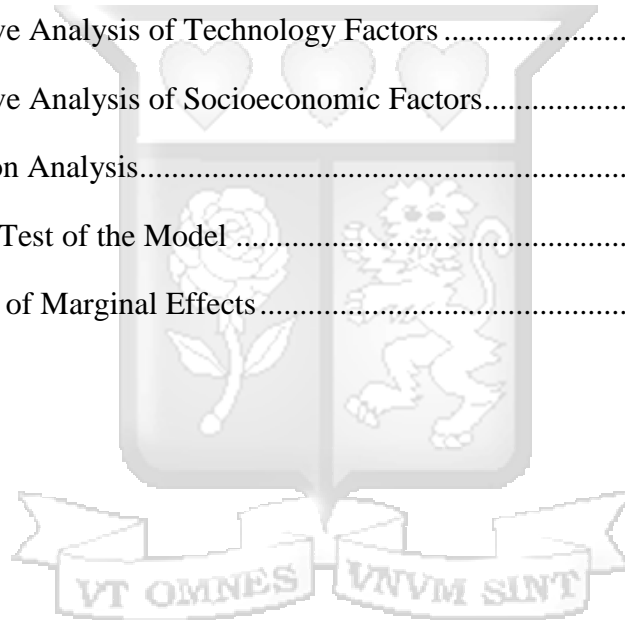
DECLARATION.....	ii
ABSTRACT.....	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
DEFINITION OF KEY TERMS.....	x
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the study	1
1.1.1 Factors affecting Youth Participation in Agribusiness.....	3
1.1.2 Youth Participation in Agribusiness.....	6
1.1.3 Kenya’s Agribusiness Sector.....	8
1.2 Statement of the Problem.....	9
1.3 Research Objectives	10
1.3.1 General Objective.....	10
1.3.2 Specific Objectives.....	10
1.4 Research Questions	11
1.5 Scope of the Study.....	11
1.6 Significance of the study.....	11
CHAPTER TWO	13
LITERATURE REVIEW	13
2.1 Introduction	13
2.2 Theoretical Framework	13
2.2.1 Push – Pull theory.....	13
2.2.2 Theory of planned behaviour.....	15
2.3 Empirical Framework.....	16

2.3.1 Market Factors and Youth Participation in Agribusiness.....	16
2.3.2 Technology Factors and Youth Participation in Agribusiness	18
2.3.3 Socioeconomic Factors and Youth Participation in Agribusiness.....	20
2.4 Research Gap.....	22
2.5 Conceptual Framework	25
2.6 Chapter Summary.....	26
CHAPTER THREE	28
RESEARCH METHODOLOGY	28
3.1 Introduction	28
3.2 Research Philosophy	28
3.3 Research Design.....	28
3.4 Target Population	28
3.5 Sampling Design and Sample Size.....	29
3.6 Data Collection Instruments.....	29
3.7 Data Collection Procedures.....	30
3.7.1 Validity Tests.....	30
3.7.2 Reliability Tests.....	30
3.8 Data Analysis and Presentation.....	31
3.9 Ethical Considerations.....	31
CHAPTER FOUR.....	33
PRESENTATION OF RESEARCH FINDINGS.....	33
4.1 Introduction	33
4.2 Demographic Information	33
4.2.1 Response Rate.....	33
4.2.2 Gender of Respondents.....	34
4.2.3 Household Characteristics	34
4.2.4 Occupation of Respondent.....	35

4.3 Descriptive Analysis	36
4.3.1 Youth Participation in Agribusiness	36
4.3.2 Market Factors	37
4.3.3 Technology Factors	38
4.3.4 Socioeconomic Factors	39
4.4 Correlation Analysis.....	40
4.5 Regression Analysis	41
CHAPTER FIVE	44
DISCUSSION, CONCLUSION AND RECOMMENDATION.....	44
5.1 Introduction	44
5.2 Summary of Findings	44
5.3 Discussion of Findings	45
5.3.1 Market Factors and Youth Participation in Agribusiness.....	45
5.3.2 Technology Factors and Youth Participation in Agribusiness	46
5.3.3 Socioeconomic Factors and Youth Participation in Agribusiness.....	48
5.4 Conclusion.....	48
5.5 Recommendation.....	49
5.6 Suggestion for Further Research	51
5.7 Limitations of the study.....	51
REFERENCES.....	52
APPENDICES	62
Appendix I: Participants Informed Consent Form	62
Appendix II: Research Questionnaire	64
Appendix III: Krejcie and Morgan Table.....	68
Appendix IV: Summary of Diagnostics Tests	69
Appendix V: Ethical Review Committee Letter	70
Appendix VI: NACOSTI Research Permit	71

LIST OF TABLES

Table 2.1 Summary of Research Gaps	23
Table 2.2 Operationalization and Measurement of Variables	26
Table 3.1 Sample Size Distribution.....	29
Table 3.2 Reliability Statistics	30
Table 4.1 Individual Household Characteristics of Respondents	34
Table 4.2 Type of Agribusiness Activity	37
Table 4.3 Descriptive Analysis of Market Factors.....	37
Table 4.4 Descriptive Analysis of Technology Factors	38
Table 4.5 Descriptive Analysis of Socioeconomic Factors.....	39
Table 4.6 Correlation Analysis.....	39
Table 4.7 Omnibus Test of the Model	41
Table 4.8 Summary of Marginal Effects.....	42



LIST OF FIGURES

Figure 2.1 Conceptual Framework.....	25
Figure 4.1 Response Rate.....	33
Figure 4.2 Participants Gender.....	34
Figure 4.3 Occupation of Respondents	35
Figure 4.4 Youth Participation in Agribusiness	36



LIST OF ABBREVIATIONS

G20	Group of 20 nations
GDP	Gross Domestic Produce
FAO	Food and Agriculture Organization of the United Nations
ICT	Information Communication Technology
IFAD	International Fund for Agricultural Development
ILO	International Labour Office
MoALF	Ministry of Agriculture Livestock and Fisheries
NGOs	Non-Governmental Organizations
SDGs	Sustainable Development Goals
SSA	Sub-Saharan Africa
TPB	Theory of Planned Behaviour



DEFINITION OF KEY TERMS

Agribusiness

Agribusiness refers to the sector of the economy that entails a sequence of interrelated activities involving agricultural input suppliers, producers, commodity buyers, food processors, food retailers and food consumers (Gunderson, Boehlje, Neves, & Sonka, 2014).

Market factors

Market factors are considered as the demand, production and supply factors that determine the success of particular business ventures (Chand & Srivastava, 2014)

Socioeconomic factors

Kilonzi (2011) defined socioeconomic factors as the various aspects arising from population demographics, social aspects, land access and farm inputs that impact involvement in agricultural activities.

Technology factors

According to Valero (2010), technology is a key tool to use, especially in disseminating information to farmers. Furthermore, adoption of technology by farmers increases food production and food security thereby contributing to national goal of improved livelihoods.

Youth Participation in Agribusiness

Youth participation in agribusiness reflects the extent to which the youth are involved in agribusiness activities which include food production, breeding, farm machinery, distribution, marketing, and sales (Ahaiabwe, Mbowa, & Lwanga, 2013).

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Agriculture is the backbone of human civilization and is fundamental to poverty eradication and economic development in the 21st century. It is estimated that 75 per cent of the global population resides in rural areas and earns their livelihoods through farming and related activities. In fact, agriculture is the backbone of developing countries' economies, contributing to between 20 and 30 per cent of the GDP of countries such as Nigeria, Egypt and Kenya. However, despite the influence of agriculture on developing countries' economies, Mukembo et al. (2014) confirmed that attracting and retaining the youth in agriculture remains a global challenge. This is despite the youth forming a majority of the population and having a significant role to play in agricultural development as well as improving food security. In Kenya, the youth comprise 36.07% of the total population (KNBS, 2019), with 64% being unemployed (MoALF, 2017). However, while the agricultural sector presents a huge opportunity for the creation of employment to absorb the youth, their participation in agriculture has been declining, from 60.72% in 1994 to 28.4% in 2020.

Agribusiness comprises the application of science and technology in agriculture and, all business and management activities conducted by firms such as the provision of farm inputs, production process, marketing and transportation of produce (Edwards & Shultz, II, 2005). Agribusiness is more than just the sale of farm produce, but instead involves all the economic activities related to agriculture, including chemicals, farm machinery, breeding, crop production/farming, distribution, marketing and sales. More processes, such as value addition, mechanization and vertical integration, offer diversification in the agribusiness process (Clay & Feeney, 2019). The global success of agribusiness and agriculture as a venture is majorly pegged on deliberate government policies and strategies towards diversification of the industry (UNIDO, 2009).

In Africa, agriculture is estimated to provide opportunities to more than 51% of the economically active population (Tomsik, Smutka, Lubanda, & Rohn, 2015) and by 2030, The World Bank is projecting that agriculture was a \$1 Trillion industry in the Sub-Saharan Region (Rooyen, 2014). Emphasis and attention on promoting agriculture and agribusiness activities have been made a global development agenda which has seen many investors investing various resources in the value chain. The trend has been welcomed by governments and the economic,

political world such as the Group of 20 Nations (G20) which echoes the importance of agriculture and agribusinesses in achieving the Sustainable Development Goals (SDGs) among African countries (Rooyen, 2014). Ng'atigwa, Hepelwa, Yami and Manyong (2020) confirm that along with women, governments regularly develop various programs aimed at transforming the sector into a more vibrant and inclusive sector and encouraging the participation of the youth.

Farmers pursue agribusiness due to its potential as an income-generating activity, a source of food and a tool for empowerment and poverty eradication (Ogunmodede, Ogunsanwo, & Manyong, 2020). Governments recognize agribusiness as a means of solving the problem of unemployment among the youth and food insecurity in developing countries (van Westen, Mangnus, Wangu, & Worku, 2019) and have encouraged the adoption of innovative practices such as farmer clustering, agro-dealer, Information Communication Technologies (ICTs), diversification and strategic planning (Odame, Musyoka, & Kere, 2008). In Kenya, the level of agribusiness involvement has intensified over the years since the 1990s as a result of market liberalization and policies that have encouraged agribusiness innovation. However, a large section of the economy still finds the sector unattractive, especially the youth, who are rapidly moving to the services sector (Som et al., 2018). This is exacerbated by the lack of significant transformation in the sector as most farmers still practice subsistence farming which yields low income.

Kenya is characterized as one of the countries experiencing the 'youth bulge', which occurs when child mortality lowers rapidly. Despite this large population, the World Bank (2019) reports that only 15% of more than 750,000 Kenyan youth who enter the job market annually get formal jobs. Concerns over the high youth unemployment have led the government to implement a series of programmes, such as the nationwide Kazi Kwa Vijana (KKV) initiative and revamping the National Youth Service programme (Langat, 2019). However, as of 2020, although the agribusiness sector contributed directly or indirectly to 60% of the labour market, only 10% of the youth were involved in agribusinesses (Muthomi, 2017). Most farmers in Kenya are above 55 years old, meaning that younger people have to take the responsibility of securing the country's food sources. However, with a rapidly urbanizing population, there is an increasing gap between food consumption and food production (Momanyi, et al., 2019). It is, therefore, urgent that the country realigns the agricultural sector and increases the involvement of the youth in agribusiness activities.

The lack of interest in agribusiness among the youth, despite its economic incentives, has sparked interest in the research community on the factors that influence participation in agriculture. In Indonesia, Zhong, Srivastava and Babu (2023) revealed that the ecosystem is influenced by technology availability to run agribusinesses, the regulatory environment and institutions, as well as the existence of intermediary organizations supporting youth, encourage youth entrepreneurship in agribusiness. On the other hand, according to Devkota et al. (2022), agricultural knowledge and awareness are significant factors that influence agribusiness participation in Nepal. These observations were also made in Nigeria, where Adeyanju (2019) affirmed that agricultural training programs increase the youths' perspectives of agribusiness and increase their active participation. Meanwhile, in Uganda, Mdege et al. (2022) were of the opinion that it is social factors, the community context, individual factors and collective agency that influence the youth's participation in sweet potato production.

Ikpea (2022) argues that Kenyan youth lack awareness of the opportunities available in agribusiness, and information on how lucrative and engaging the sector is, and others have a bad preconceived perspective, and hence are not interested in trying. The researcher adds that the youth have negative perceptions about the viability of agribusinesses and face challenges accessing finance, information and land. Furthermore, most of the policies instituted by the government do not focus on or include the youth in policy dialogue (Njeru, 2016). Youth need to understand the importance of agriculture and agribusiness so as to replace the ageing farmers and overcome the major constraints to expanding the agribusiness sector (Mibey, 2015). Ikpea (2022) calls for a more holistic approach in the analysis of the challenge of youth participation in agribusiness as a means of determining the best way to increase the sector's attractiveness to the youth.

1.1.1 Factors affecting Youth Participation in Agribusiness

Ocampo and Reyes (2016), in their study in Iran, found out that income, access to extension services, farming systems and socioeconomic factors limit the attitude of the youth towards agricultural services. In South Africa, Nxumalo and Oladele (2013) in their study on youth participation in agriculture, indicated that poor perception, education and infrastructural development affected their involvement. Ifenkwe (2012) notes that Nigerian youth are barely interested in engaging in agriculture since they do not perceive farming as an attractive career field. The major factors fronted as hindering youth participation in agriculture include capacity constraints, few incentives like low pay, job insecurity, climatic changes and poor working conditions. Agbonlahor, Oluwafemi, Sodiaya, Oludare and Oke (2012) contends that poor

education, access to resources and land capacity have affected agriculture activities within Nigeria. Adesina and Favour (2016) revealed that the attitude of the youth was one of the key factors that significantly influenced youth engagement in agricultural activities.

In localized studies, Kising'u (2016) showed that agricultural training, improvement of capacity building, financial resources and modernization of agriculture has largely affected the productivity of the industry in Kenya. Muthomi (2017), in a study on agribusiness, found out that the majority of the youth were considering venturing into agribusiness but were hindered by a lack of credit, poor land size, access to modern agricultural tools and inadequate extension services. Gichimu and Njeru (2014) showed that lack of land and credit to finance their startups affected the youth participation in Agribusiness in Kenya. Mutua (2014) revealed that socio-economic factors, technological factors, government policies, and distribution of information on agribusiness opportunities improved youth involvement in agribusiness.

The Ministry of Agriculture, Livestock & Fisheries (MoALF) (2017) indicates that factors affecting youth in agribusiness in Kenya include: Negative perception of agricultural activities, inadequate skills and information, inadequate market infrastructure and entrepreneurial skills, limited incentives and investment in agricultural innovations, research, technology development and utilization, limited access to arable land for agriculture, limited access to financial services, and poor development and adoption of policies to support youth in agribusiness, natural calamities such as drought, and weak environmental governance. Most of these problems revolve around value addition, information and financial access, government support and technological facilitators.

Mibey's (2015) study investigated youth involvement in agribusiness using land access, credit access and youth attitudes. Kisung'u (2016) investigated factors influencing youth involvement in agribusiness value chain production in the Kathiani sub-county using youth awareness, youth perceptions of agriculture, socio-capital networks and economic factors as independent variables, with government intervention and accessibility to extension services forming the moderating and intervening variables. Maritim (2020) studied agribusiness in Kericho county and used similar variables, but included perceived benefits and did not include the intervening variables' role. Ng'atigwa, Hepelwa, Yami and Manyong (2020) condensed these factors into economic factors, social factors and environmental factors. These factors are quite similar and rotate around financial access, market access, perceptions, technological availability and government support.

Most of the studies on youth involvement in agriculture have focused on a single region. Further, most of these studies used variables that can be condensed to reflect a clearer image of the determinants of youth involvement in agribusiness. With most of the agribusiness activities happening within the two counties surrounding the capital city (Machakos and Kiambu), where most of the urban population resides, it is paramount to determine the factors that influence their involvement in agribusiness. Kiambu is Kenya's highest agricultural producer, with agriculture accounting for 17 per cent of the county's income. Agriculture is also the main activity carried out in most of the sub-counties in Machakos County. Both county governments are pushing for the uptake of modern farming techniques as a means to improve food production and to address climate change effects (Ngwili, 2014). With their proximity to the capital city, they form large sources and markets for agricultural products. This study condensed these factors into three main emerging themes as employed by Ng'atigwa, Hepelwa, Yami and Manyong (2020), and investigated the effect of market factors, technological factors and socioeconomic factors on youth participation in agribusiness in Machakos counties, Kenya.

Kilonzi (2011) defined socioeconomic factors as the various aspects arising from population demographics, social aspects, land access and farm inputs that impact involvement in agricultural activities. Adolwa, Esilaba, Okoth and Mulwa (2010) showed that social factors such as the education of farmers, income level, farmer skills and family demographics are determinants of agricultural productivity. Maritim (2020) established that access to credit, access to adequate land, perceived benefits, and attitude affected the youth participation in Agri-business in Kericho County. Amariah and Murei (2022) identified economic factors and institutional factors such as level of income, farm size, type of farming enterprise, farming and entrepreneurial experience, size of the workforce, land tenure, access to training, access to information, and distance to market as the determinants of smallholder participation in agro-processing. Sunday Baba (2019) affirmed that access to land is critical in youth participation in agribusiness in Sudan. According to Umeh, et al. (2020), socioeconomic determinants influencing youth agripreneurship include marital status, education status, income per annum, source of investment capital, and family agro-history. The current study applied these variables to determine the socioeconomic determinants of youth's involvement in agribusiness.

Market factors are considered as the demand, production and supply factors that determine the success of particular business ventures (Chand & Srivastava, 2014). In a study of small-scale farmers in Kenya, Omiti, Otieno, Nyanamba and McCullough (2010) demonstrated that the

availability of market information, improvement of market infrastructure such as roads and storage, market integration and more retail outlets were critical to promoting agricultural production in the country. Otieno (2013) revealed that market factors such as improved facilities, production systems, improved breeding and access to market information were key to better productivity in the agricultural sector. Sigei, Bett and Kibet's (2014) results showed that better marketing contracts, group marketing, marketing experience, and access to the market significantly predicted market participation among small-scale pineapple farmers in Kericho County. According to Rogito (2020), limited access to information services affects all aspects of agricultural value chain creation, while lack of access to arable land and financial resources also contributes to low involvement of youth. Nyangweso and Wambua (2019) argue that loans are mainly given to youth who have established enterprises or agribusiness rather than start-ups. This study used these variables to examine the market factors that determine youths' participation in agribusiness activities.

The adoption of new and improved technologies has been the strongest reason for the growing competitiveness of agribusiness (Kinyangi, 2014). According to Valero (2010), technology is a key tool to use, especially in disseminating information to farmers. Furthermore, the adoption of technology by farmers increases food production and food security, thereby contributing to the national goal of improved livelihoods. Agricultural technologies are among the most effective tools available to small-scale farmers both in the past and in modern times; technological change has been noted to be the key factor shaping agriculture in the last century (Wanyama, Obare, Owuor, & Wasilwa, 2013). Etela and Onoja (2017) showed that promoting the development of a platform for young farmers to interact and share vital information regarding agri-business with established farmers. Meirmanova (2019) asserts that mobile applications can accelerate agribusiness growth in African economies. Mukundi (2019) found out that the cost of new technologies, government regulations, standards and lack of supportive trade agreements limited the competitiveness of the firms. This study investigated how these factors influence youth agribusiness involvement.

1.1.2 Youth Participation in Agribusiness

Agribusiness refers to the sector of the economy that entails a sequence of interrelated activities involving agricultural input suppliers, producers, commodity buyers, food processors, food retailers and food consumers (Gunderson, Boehlje, Neves, & Sonka, 2014). Knowledge on the various sectors of agribusiness is important to give a better understanding to youth on the various careers and business opportunities available among the various agribusiness value

chains. Furthermore, education in agribusiness will enable the perception of society towards agriculture and agribusiness to change and transform the sector to a more lucrative and engaging entity. Youth form a major catalyst for change and are the backbone of Kenya's workforce as well. They have the potential to mobilize national development through their participation in agriculture and agribusiness activities (Mibey, 2015). With a population of 55 million (Worldometer, 2022), the Kenya Country Report on Youth Employment (2014) confirms that although the youth account for 35.4% of Kenya's population, the youth unemployment is higher than the overall national unemployment rate, standing at 35 per cent against 10 per cent. A United Nations Development Programme (UNDP) study reports that 80% of the currently 2.3 million unemployed are aged between 15 - 34 years (World Bank, 2014).

Participation refers to the extent of involvement in a particular activity, process or decision (Agbonlahor, Oluwafemi, Sodiaya, Oludare, & Oke, 2012). Youth participation in agribusiness reflects the extent to which the youth are involved in agribusiness activities which include food production, breeding, farm machinery, distribution, marketing, and sales (Ahaibwe, Mbowe, & Lwanga, 2013). Youth agribusiness involvement denotes the number of youth working as producers, input suppliers, transporters, distributors, processors, wholesalers, and retailers. According to Ng'atigwa, Hepelwa, Yami and Manyong (2020), youth involvement in agriculture is a recent phenomenon and governments across Africa, including Kenya have made commitments to engage youth in agribusiness as a strategy to address youth unemployment. This study determined the level of involvement by requesting respondents to answer whether they are not involved, partially involved or involved full-time.

Youth unemployment is a result of the country's inability to create enough jobs to accommodate a large number of new labour market entrants, and consequently, more than 400,000 young people are left out each year (Awiti & Scott, 2016). With the agricultural sector accounting for 30% of the annual Gross Domestic Product (GDP) and another 27% indirect contribution, the sector is responsible for most of the job opportunities in Kenya. It presents a huge opportunity for job creation to facilitate youth absorption. However, the sector is yet to fully exploit the potential of the youth and it remains largely unattractive due to negative perception and lack of transparency and market information (Kising'u, 2016). The youth perceive it as a backward way of earning money and consider it a career of last resort and low monetary benefits. Further, the information regarding market access, land, and financing is limited, hindering adequate engagement of the youth in agriculture. Most of those engaged in

agricultural activities are aged between 50 and 65 years, and they are predominantly traditional and subsistence farmers, hence the perception that farming is a low-income but drudgery business.

The low interest in agriculture among the youth could also be a result of public sector systems that have invested heavily in production with limited value addition, processing, and marketing (Babu, Zhou, Koeber, & Srivastava, 2020). This is a threat to national economic growth since the youth will soon form the largest economic workforce. This study aims to identify the factors that encourage or deter youth involvement in agricultural businesses. This was achieved by analyzing the level of agribusiness activities among the youth in metropolitan towns in Kenya with and without exposure to any form of agribusiness education.

1.1.3 Kenya's Agribusiness Sector

The agricultural sector is key to Kenya's economy, making a direct contribution of to 26 per cent of the Gross Domestic Product (GDP) and another 27 percent of GDP indirectly through linkages with other sectors. Since independence, the sector has employed an average of 45 percent of the total population and more than 70 percent of Kenya's rural population. The World Bank (2019) report confirms that between 2013 and 2019, the agriculture sector contributed an average of 21.9% of gross domestic product (GDP), employing 56% of the total labor force in 2017. Agricultural products also accounted for 65% of merchandise exports in 2017, providing sources of income to more than 80 percent of the population, both directly and indirectly. The sector drives transport, construction, tourism, education, manufacturing, and other social services. The sector is set to play a key part in supporting the rapid population growth witnessed in the country (11 million in 1970 to 55 million in 2022) (Worldometer, 2022).

The Kenyan government has recognized this sector's importance, and its new economic update shows that boosting agricultural productivity can help reduce poverty by enabling more rural poor households to grow enough food to begin selling it (Osti, et al., 2015). Further, improving the attractiveness of the sector would encourage the participation of the populations least involved in it, such as the youth. Given the importance of the agriculture sector in the development of the economy, the sector's importance in poverty alleviation cannot be overstated. It is essential that the sector's performance is strengthened to enable the engagement of the most vulnerable populations and to facilitate recovery after recent years of drought and slow development.

Kiambu town is located in the central region of Kenya with a total population of 2,417,600 people. The youth population is estimated to be 963,571, which is 39.9% of the total population (KNBS, 2019). Kiambu town has both agricultural and commercial activities taking place. Cash crops and food crops such as tea, coffee, horticultural products, beans, maize, peas, and potatoes are grown within the area (County Government of Kiambu, 2020). Hence, the youth residing in the town are able to take part in agribusiness activities. Machakos town is location in the eastern part of Kenya. The total population is estimated to be 1,007,829, and the youth population is 326,249, which is 32.4% of the total population (KNBS, 2019). The area is mostly semi-arid, and subsistence farming of cereals and fruits is very common. The area also has a high level of commercial activities that help to promote agricultural activities (County Government of Machakos, 2020).

Agriculture is the main income earner in both of these counties, and both county governments have initiated similar programs and partnered with AgriBiz Programme to develop agribusiness incubation hubs, and are also offering financial support as well as training on better farming practices to enable them to maximize on their production. Xie et al. (2022) also report that both these counties use services offered by the Global Alliance for Improved Nutrition (GAIN), which operates the Keeping Food Markets Working (KFMW) program. Through such programs and other local extension services, the counties have introduced improved maize varieties as well as good agronomic practices. Furthermore, the county governments have pledged to assist farmers in adopting and develop value additional technologies and identify appropriate entry points for youth along agriculture value chains (AGRA, 2020).

1.2 Statement of the Problem

Agriculture is the main income-generating activity in Kenya despite being considered hard and unattractive work by the contemporary youth (Njeru & Gichumu, 2015). The World Bank (2016) reports that the country is experiencing an exodus from rural areas to urban areas as the youth search for more attractive income-generating options in the services sector. Awiti and Scott (2016) argued that most Kenyan youths have low interest in agribusinesses, citing that only eleven percent of the youth were interested in pursuing farming as an occupation. However, while it may seem that the youth generally lack interest in agribusinesses, Mibey (2015) acknowledged that some of the contributing factors are beyond the youth's power. In their research, they asserted that empirical evidence on this phenomenon was lacking and called for more empirical evidence on this problem.

Poor involvement of the youth in agribusiness has spurred empirical research. The FAO (2010) reports that the youth lack competent farming skills and need significant training and capacity building. On the other hand, according to Divya (2015), the youth lack adequate land and finances. Social support and land to get involved in agricultural activities. According to Kangai and Mburu (2012), the youth can be encouraged to participate in agriculture through increased training, availability of agricultural innovations, financial services, and internet connectivity. Swarts and Aliber (2013) argued that the government has failed to make agriculture attractive to the youth, which has resulted in skewed development of rural economies and engagement in agribusiness.

The studies above are generally pointing to a continuing problem in stimulating the participation of youth involvement in agriculture. However, most of the studies are unilateral and have not taken into consideration compounded factors influencing participation in agribusiness. Nyabam, Tarawali, and Ijie (2018), for instance, did not focus on youth involvement in agribusiness, while Ngatia (2017) focused on taxes and did not investigate socioeconomic factors. Further, Njenga, Mugo, and Opiyo's (2012) study focused on women only. Adeyanju (2019) specified financial training through agricultural programs in Nigeria only. None of the studies identified refers to agribusiness involvement across two counties. This is among the first of its kind to assess the factors that influence youth participation across two counties with similar paths to agribusiness development. This study will fill this gap by investigating the factors that affect youth participation in agribusiness in Kiambu and Machakos towns in Kenya.

1.3 Research Objectives

1.3.1 General Objective

The main objective of the research was to examine the factors influencing the participation of youth in agribusiness in Kiambu and Machakos towns in Kenya

1.3.2 Specific Objectives

- i. To determine the effect of market factors on the participation of youth in agribusiness activities within Kiambu and Machakos Town.
- ii. To establish the effect of technology factors on the participation of youth in agribusiness activities within Kiambu and Machakos Town.
- iii. To determine the effect of socioeconomic factors on the participation of youth in agribusiness activities within Kiambu and Machakos Town.

1.4 Research Questions

The study sought to answer the following questions:

- i. What is the effect of market factors on the participation of youth in agribusiness activities within Kiambu and Machakos Town?
- ii. What is the effect of technology factors on the participation of youth in agribusiness activities within Kiambu and Machakos Town?
- iii. What is the effect of socioeconomic factors on the participation of youth in agribusiness activities within Kiambu and Machakos Town?

1.5 Scope of the Study

The aim of the research was to examine the factors influencing the participation of the youth in agribusiness within Kiambu and Machakos Town. The contextual scope of the research examined the effect of socioeconomic, market, and technology on participation in agribusiness activities. The theoretical scope of the research was limited to the application of the push-pull theory to anchor the independent variables and the theory of planned behavior to determine the motivations to participate in agribusiness. The geographical scope of the study examined on examination of agribusiness activities among the youth within Kiambu and Machakos Town. The methodological scope of the study was examined on a mixed-research approach with a time scope limited to June 2021 and May 2022.

1.6 Significance of the study

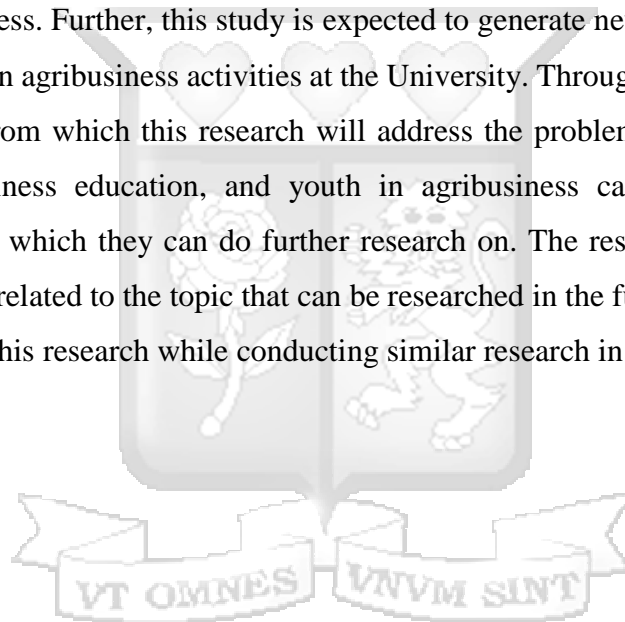
It is hoped that important beneficial information will be generated for use by the Ministry of Agriculture Livestock and Fisheries, the Youth Department, policy makers, Non-Governmental Organizations (NGOs), and other private sectors implementing agricultural projects that target youths within Kenya. By highlighting the key problems that affect youth in agribusiness, projects and strategies being made by the stakeholders mentioned above were more focused on specific areas since this study will provide baseline information that can be used to focus the implementation of their work. In the long run, better practical policies can be put in place to encourage the youth to participate in agribusiness activities since agriculture and the agribusiness sector are key contributors to the welfare of the economy.

This study is significant since the agribusiness sector is the back bone of the Kenyan economy. Youth engagement in agribusiness activities is one of the ways through which the National and County governments can address the youth un-employment problem in the country. The findings from this study are thus expected to contribute to the efforts of the national and county

government efforts of addressing youth unemployment, and improve food production and food security through youth participation in agriculture.

It is anticipated that this study will generate knowledge within the agribusiness sector which could be used by financial institutions, market players, and extension actors to tailor-make products and services that meet the needs and expectations of the youth in agribusiness. This will bridge the market gap of the lack of efficient financial products and services that promote agribusiness activities and innovations in the sector.

The study findings were useful to development partners and donors as it would help them know how to direct support to youth in agribusiness. Donors may want to find out why youth are not engaging in agribusiness and come up with projects that support and encourage youth to venture into agribusiness. Further, this study is expected to generate new knowledge in regard to youth engagement in agribusiness activities at the University. Through the research findings and the perspective from which this research will address the problem, other researchers of agribusiness, agribusiness education, and youth in agribusiness can be able to identify knowledge gaps from which they can do further research on. The research will recommend further areas of study related to the topic that can be researched in the future. A researcher can apply the findings of this research while conducting similar research in other countries.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature points to the fact that agriculture remains a key sector where the surplus unemployed youthful labor force can be employed in Africa (FAC, 2011). Modern and productive agricultural practices have the potential to overcome food insecurity and offer employment opportunities to young people. This can be done by upgrading the existing jobs in agriculture or by creating new ones. Despite the recognition of the potential of the agriculture sector internationally and nationally, the literature highlights the decline of youth interest and engagement in agribusiness (Ahaibwe, Mbowa, & Lwanga, 2013). The lack of interest in agribusiness activities by the youth has been persistent despite the efforts by governments and NGOs in the field of agriculture and youth development (IFAD, 2011).

This chapter attempts to discuss the theoretical, empirical, and conceptual framework relating to the effect of agribusiness education on youth in agribusiness. Relevant literature was sought and thoroughly reviewed. The literature also offered insight into why the youth are reluctant to venture into agribusiness, if there is any association between agribusiness education and the number of youths involved in agribusiness activities, and the effect of agribusiness education in solving problems facing youth in agribusiness.

2.2 Theoretical Framework

This study looked at the push–Pull Theory and the Theory of planned behavior to explain the objectives of the study. The push – pull theory was formed in the late 1980s. The theory aims to explain the motivational factors that influence individuals to pursue an opportunity. The theory of planned behavior illustrates that an individual’s decision to pursue opportunities in entrepreneurship is dependent on the intention. The intention is influenced by personal attitudes, subjective norms, and perceived behavior controls. The Push-Pull Theory highlights the socioeconomic, technological, and market factors that either encourage or discourage participation in agribusiness activities. The theory of planned behavior identified the factors that are unique among the youth and how these factors impact youth decisions to participate in agribusiness activities.

2.2.1 Push – Pull theory

The push-pull theory was proposed by Lee (1966), and it highlights that there are various motivational factors that influence individuals to pursue an opportunity. The theory was

developed around the classification of various motivational factors into push and pull factors. The push factors are influenced by personal or external aspects, while the pull factors draw an individual to pursue the opportunities realized (Hakim, 1989). However, it has been discovered that businesses that start due to push factors are less financially successful as compared to those that start due to pull factors. Push factors occur due to circumstance, for example, when one loses their job and decides to venture into business as an alternative while they look for a new job. With pull factors, business owners identify an opportunity they are interested in and pursue it (Amit & Muller, 1995).

In spite of the use of the push – pull theory in many studies little exploratory research has been done since its inception in the 1980s to advance the theory with the evolving world. The push and pull categories need to be revisited because they have evolved with time. Factors such as barriers to entry have become less significant factors in the success of businesses motivated by push and pull factors in the post-internet era (Kirkwood, 2009). In addition, the theory has not revised the existing push and pull motivating factors to include those that affect sectors such as agribusiness (Ninson & Brobbey, 2023). The theory is still generalized to entrepreneurship rather than disintegrating it to identify specific push and pull factors that affect various sectors. Therefore, it is hard to determine using the push – pull theory if agribusiness education is a push or pull motivational factor for youth in agribusiness (Sunday Baba, 2019).

Van Hear, Bakewell, and Long (2018) used this theory in examining the factors that fuel rural-urban migration, while Kim, Choi, and Choi (2019) used the theory to develop a research model to investigate individuals' switching intention to AR/VR services. In business, Parveen, Junaid, Saleem, Hina, and Ahmed (2020) applied the theory to analyze women's intention to pursue entrepreneurship. Malawi's Zidana, Kaliati, and Shani (2020) applied the theory to examine youth engagement in agribusiness projects. Sunday Baba (2019) used the theory to identify the impact of access to land on the participation of the youth in agribusiness, and Ninson and Brobbey (2023) used the theory in assessing how lack of access to land, finance, agro technologies, education and skills in agribusiness affect the participation of the youth in agribusiness.

This theory is relevant in this study because it helps explain why only a few youths venture into agribusiness opportunities, as it asserts that there are many factors that either push or pull the youth away or towards agribusiness. The theory suggests that factors such as negative perception, lack of finances and access to markets, lack of information on agribusiness, and

poor infrastructure are among the factors pushing the youth away from engaging in agribusiness (Ahaibwe, Mbowa, & Lwanga, 2013), while income generation, agribusiness policies, technological availability, and financial support are pull factors that encourage agribusiness development (Alavion, Allahyari, Al-Rimawi, & Surujlal, 2017; Kangai & Mburu, 2012). Hence this theory can enable the research to unearth the factors that either encourage or discourage youth participation in agribusiness.

2.2.2 Theory of planned behavior

The Theory of Planned Behaviour (TPB) by Ajzen (1991) suggests that decisions such as whether to pursue opportunities in entrepreneurship is determined by the individual's intention. The intention is an outcome of the interaction of personal attitudes, subjective norms and perceived behavior controls (Ajzen, 2015). The subjective norms highlight the probability of an individual taking up entrepreneurship opportunities (specifically in the agribusiness sector) as a result of socio-cultural reasons that influence their decisions. The personal attitudes of an individual indicate the strengths of a person and their willingness to take up an opportunity in agribusiness. Ajzen (1991) is assertive that an individual's personal attitudes and their environment shape the perceived behavior controls and perceptions towards agribusiness and the possible opportunities. Studies show that people form their attitudes from beliefs and perceptions of likely outcomes. Therefore, the more likely the possibility from the portrayed attitudes, the stronger the intention to pursue opportunities in the agribusiness sector (Zakaria, Adam, & Afishata, 2014).

The theory of planned behavior has been used extensively to examine human decisions, with Ajzen (2015) using it to examine customers' food consumption decisions. Oztekin, Teksöz, Pamuk, Sahin, and Kilic (2017) examined gender perspectives and recycling behavior. In business, this theory was applied by Kautonen, Van Gelderen, and Fink (2015) to predict entrepreneurial intention, while Alavion, Allahyari, Al-Rimawi, and Surujlal (2017) used the theory to examine agricultural e-marketing adoption factors. This theory was key in this study as it was used to predict the factors that influence agribusiness involvement intentions. This theory is a base model for examining how attitudes, subjective norms, and perceived behavioural control predict the intention to engage in certain behaviours, and in this case, involvement in agribusiness (Kim, Choi, & Choi, 2019). It supports the Push-Pull factors by examining the individual factors such as perceived ability, knowledge, or skills that push or pull the youth towards agribusiness.

From the theory of planned behaviour, societal influence on individual decisions with regard to agribusiness is very high. According to this theory, the perception of agribusiness influences the youth's intention to partake in the sector, as the youth are highly influenced by societal perceptions (Adeyanju, Mburu, & Mignouna, 2020). These researchers asserted that agribusiness education, training programs, technologies, and promotional activities alone might not increase the sector's attractiveness as long as its perception remains negative. It is important to educate society on the benefits agribusiness education, and agribusinesses have on the economy at large in order to increase the number of youths who pursue agribusiness opportunities (Osti, et al., 2015). The TPB theory anchors the individual factors characteristic to the youth that have an influence over their decision to venture into agribusiness.

2.3 Empirical Framework

2.3.1 Market Factors and Youth Participation in Agribusiness

Market factors are considered the demand, production, and supply factors that determine the success of particular business ventures, market linkages, market information, and market infrastructure. According to Rogito (2020), limited access to information services affects all aspects of agricultural value chain creation, while lack of access to arable land and financial resources also contributes to low involvement of youth. Nyangweso and Wambua (2019) argue that loans are mainly given to youth who have established enterprises or agribusiness rather than start-ups. This study used these variables to examine the market factors that determine youths' participation in agribusiness activities.

Dolma (2020) investigated factors affecting youths' decision to pursue agri-business and the challenges encountered by small-scale young farmers in Bhutan. The study adopted a combination of random selection and purposive sampling to select respondents for the study. Data was collected through questionnaires and interview schedules. Secondary data was sought from CARLEP, ARDC, and RAMCO. Data analysis involved the use of a binary logit model to explain the relationship between one dependent variable and one or more independent variables. It was determined that poor production and management skills, lack of access to land, lack of access to the market and market information, and lack of adequate financing significantly impact youths' ability to engage in agri-business. Youth participation was improved by increased training on agriculture and financial literacy, increasing market access and availability of information such as taxation policies and new agri-practices, and provision of technical and financial support. Improving marketing channels and associated infrastructure

were also noted to influence youths' decisions to engage in agribusiness. The study focussed on agribusiness involvement in Bhutan and not in Kenya.

In another research, Kising'u and Kising'u (2016) explored factors influencing youth participation in agricultural value chains. The study adopted a descriptive design study to determine the influence of youth perceptions of agriculture and access to socio-capital networks influence agricultural participation among the youth. The study was guided by the theory of reasoned action and adopted stratified proportionate sampling in selecting the respondents. It was determined that access to market linkages in the supply chain, micro-credit access, access to socio-capital networks, and awareness of market information were influential in promoting youth participation in agricultural value chains. It was determined that youth training, improved technology investment, the establishment of technology innovation centers, provision of machines and agricultural equipment, and facilitating linkages to other networks would encourage the youth to engage in agri-business. Access to market information was noted to significantly influence youth perceptions about agriculture. The study adopted stratified proportionate sampling and Pearson's correlation, while the current used purposive sampling and central tendency.

In another research that examined the drivers of youth involvement in agriculture in the Davao Region of the Philippines, Lumen (2020) adopted a mixed-method approach involving content and statistical analyses. Online structured surveys were used in data collection. Cluster sampling enabled the selection of study locations. Descriptive analysis using measures of central tendencies and frequencies was used to characterize the respondents, and a binary regression model was used in the estimation of the relationship between the dependent and independent variables. The study concluded that the availability of infrastructure, social amenities, and technical support in agricultural areas improved youths' involvement in agriculture. Establishing a link between sector enablers and the youth through agricultural seminars and promotion of benefit-maximizing opportunities coupled with agricultural education in rural areas was also noted to enable engagement in agriculture. The study focussed on youth involvement in select rural areas in the Philippines.

Moreda (2020) conducted a review of the factors affecting youth participation in agribusiness in Ethiopia. The study focused on agricultural participation in areas of crop production, animal husbandry, forestry, fisheries, and apiculture, which are the mainstays of the agricultural sector in the country. The study results showed that limited access to adequate land, access to market

information, financial access, poor agricultural tools, and attitudinal problems were associated with the low involvement of youth in agribusiness. The study noted that improved market incentives, extension services, and creating awareness might be vital to removing the bottlenecks to youth participation in agriculture. The research, however, does not focus on how government or technological factors impact youth participation in agriculture. This was covered in the scope of the current study.

In Nigeria, Nyabam, Tarawali, and Ijje (2018) conducted an empirical analysis of IITA youth in the agribusiness model as a panacea for solving the youth unemployment problem in Nigeria. The study focussed on a youth population between 18-35 years who are participating in agribusiness. The research data was collected using interviews and data bases from the International Institute of Tropical Agriculture (IITA) Youth Agripreneurship. The findings indicated that income from agricultural activities, access to the market, and improved promotional of agricultural activities were related to increased attractiveness of farming to the youth. The study noted that appropriate policy changes to scale-up and improve sustainable agriculture are vital to the involvement of youth in agribusiness. The research, however, was not limited to youth participation in agribusiness in Kenya.

2.3.2 Technology Factors and Youth Participation in Agribusiness

Technological factors encompass all the production techniques, information and communication resources, production, logistics, marketing, and e-commerce technologies that affect how people and businesses communicate, sell their products, interact with, and gather intelligence on products, customers, suppliers, and competitors. Agricultural technologies also include farming equipment, weather forecasting equipment, and land assessment technologies. This study posits that these factors influence youth's intentions to partake in agricultural activities.

Etela and Onoja (2017) assessed the impact of e-agriculture incentives and agribusiness incubators on youth involvement in agriculture. The researchers carried out exploratory research, which aimed at reviewing the impact of agricultural policies and their contribution to youth employment in e-agriculture. The study determined that adopting a national agricultural policy that promotes the establishment of e-agriculture and incubator development is key to incentivizing youth involvement in agriculture. This would improve inclusion, information distribution, and network establishment and increase a sense of ownership among youth in the agriculture value chain. The establishment of e-agriculture incubators was noted to be key to

providing vital links between universities and the market, promoting the development of a platform for young farmers to interact and share vital information regarding agri-business with established farmers. Further, agri-business incubators were noted to promote mentoring opportunities and the establishment of long-term partnerships among prospective farmers. The study did not access the impact of socio-economic factors on youth involvement in agribusiness.

Angwenyi (2016) used a descriptive design in their investigation into the influence of agricultural tele-promotion on youth participation in agribusiness. The study specifically focussed on the influence of the Shamba Shape-up Show in incentivizing youth involvement in agribusiness. The study adopted a descriptive research design and stratified random sampling to target the respondents. The study determined that negative perceptions among the youth about the financial viability of agriculture, inadequate access to agribusiness opportunities, exclusion of youth from policy-making processes, poor access to capital, finance and collateral, ineffective career guide in schools, and lack of workable and feasible schemes and programs significantly contribute to lack of youth involvement in agriculture. Further, among the youth, information about agriculture was mainly sought from radio, televisions and the internet. Television shows like Shamba Shape-up were noted to significantly influence the type of information that the youth can access regarding agribusiness. The show's ability to disseminate high-quality information in a timely fashion, involvement of agricultural experts, and interactive capability is key to incentivizing youth participation. The study demonstrated that emergent technologies are key to distributing useful and timely information to the youth and their influence in address youth un-involvement in agribusiness.

Mukundi (2019) specified the association between technological innovation and the competitiveness of agribusiness firms in Kenya. The study was descriptive, with data collected from firms participating in the production and exports of coffee, tea, and horticultural produced. The study relied on Google forms and interviews in the data collection. The study found out there was moderate utilization of technological innovations within the agribusiness. The study found a moderate influence of technological innovations on the competitiveness of agribusiness firms. The study found that the cost of new technologies, government regulations, standards, and lack of supportive trade agreements limited the competitiveness of the firms. The study was focussed on firm involvement, while the current study involves examining determinants of youth participation in agribusiness.

On the other hand, Njeru (2016) used a cross-sectional research design to assess the influence of selected factors on youth participation in agriculture in Kajiado North Sub-County, Kenya. The study used two questionnaires in data collection from youth members and agricultural officers. The study results showed that access to land, financial markets and modern agricultural tools influenced the participation of youth in agriculture. The study also showed that the perception of the youth on agriculture and supportive government initiatives are vital to youth participation in agriculture. The current study expounded on the research and examined the factors affecting the participation of youth in agribusiness within Kiambu and Machakos County.

Elsewhere, Kinyangi (2014) assessed small-scale farming and technological innovations adoption. The study specifically sought to determine how access to credit facilities, technology training programs, availability of agricultural extension services, and market factors influence the adoption of technology in farming among Kakamega-based small-scale farmers in Kenya. The study adopted an exploratory research design and used simple random sampling in selecting the research respondents. Capital and credit services' availability, agri-training, the establishment of market links, and instituting farming extension officers resulted in improved farming productivity among small-scale farmers. The extension officers' proficiency in the provision of technical training was noted to significantly influence the type and speed of technology adoption. The study did not assess drivers of youth involvement in agribusiness.

2.3.3 Socioeconomic Factors and Youth Participation in Agribusiness

Social and economic factors include aspects of livelihood such as income, education, employment, community safety, and social support that have a significant impact on how well people live. These factors affect individuals' decisions since they determine to spend. This study investigated whether these factors influence the youth's decisions to invest in agribusinesses.

Suvedi, Ghimire, and Kaplowitz (2017) investigated farmers' participation in extension programs and their impact on technology adoption in rural Nepal. The study adopted a cross-sectional research design that sampled respondents using a multistage random sampling technique. Data analysis involved the use of a logistic regression model, frequency counts, and percentages. Findings showed that technology adoption was significantly influenced by extension services. Agribusiness training, membership in farmers' associations, and provision of off-farm employment opportunities were among the extension services that improved

technology adoption among farmers. The study focussed on socio-economic extension services' impact on farmers' technology adoption; the current focus is on the participation of the youth.

Ng'atigwa, Hepelwa, Yami, and Manyong (2020) carried out an assessment of factors promoting Tanzanian youth involvement in horticulture agribusiness. Adopting a multi-stage random sampling technique, the researcher contacted 576 youth from Njombe region. Data analysis involved the use of a logit model and descriptive analysis. It was determined that the level of education attainment, management innovation, youth perception of horticulture, quality of packaging materials, gender, and access to land were the key factors influencing youth involvement in horticulture agribusiness. The study recommended instituting investment programs, horticulture education and promotion, management education, increasing incentives, increasing accessibility of environmentally-friendly packaging materials, provision of youth-friendly credit facilities, institution of women empowerment initiatives, and improved storage from both private and government facilities would improve youth involvement in horticultural agribusiness.

Similarly, Maritim (2020) used a descriptive design in their analysis of factors influencing youth participation in agri-business in Kericho County, Kenya. The population of the study was 7560 youth from a registered youth group. The study adopted a questionnaire in the data collection with both descriptive and inferential statistics. Findings established that access to credit, access to adequate land, perceived benefits, and attitude affected the youth participation in Agri-business in Kericho County. The research, however, did not extend to government and technological factors in identifying their effect on youth participation in agriculture.

In another research, Laven and Pyburn (2015) carried out a study aimed at determining the factors promoting women's involvement in agri-business activities; and the role played by agribusiness privatization. The research sought to establish the role played by Corporate Social Responsibility measures, certification of social and environment standards and private-public partnerships in triggering gender inclusivity and agribusiness sustainability. The study determined that women empowerment measures, facilitating agri-business knowledge development, funding and certification to private, voluntary, and socio-economic standards were among the key factors noted to trigger agribusiness involvement. The study carried out a literature review of factors facilitating women's involvement in agri-business. The current research focusses on youth involvement in agribusiness.

2.4 Research Gap

Many studies on youth and agriculture have been conducted across the world. However, limited attention and emphasis have been given to studies in the agribusiness sector, that is the entrepreneurial aspect of the agricultural sector in Kenya. Reviewed research highlights the importance of agribusiness education in the education curriculum so as to cultivate the interest of youth in agribusiness. From the review literature, a number of research gaps were identified and are summarized below.

The study in Nepal by Suvedi, Ghimire, and Kaplowitz (2017) focused on the impact of extension programs on farmers' participation in agribusiness. On the other hand, Kinyangi (2014) focused on small-scale farmers. Studies by Nyabam, Tarawali, and Ijie (2018) and Dolma (2020) were carried out in different geographical regions. The government has made various initiatives to encourage the youth to venture into agribusiness through the formation of policies regarding the participation of youth in agribusiness. However, the implementation of these policies has not been well executed; hence substantial results are not available. Further, access to land and accompanying resources is limited to the rich and those with favourable credit terms.

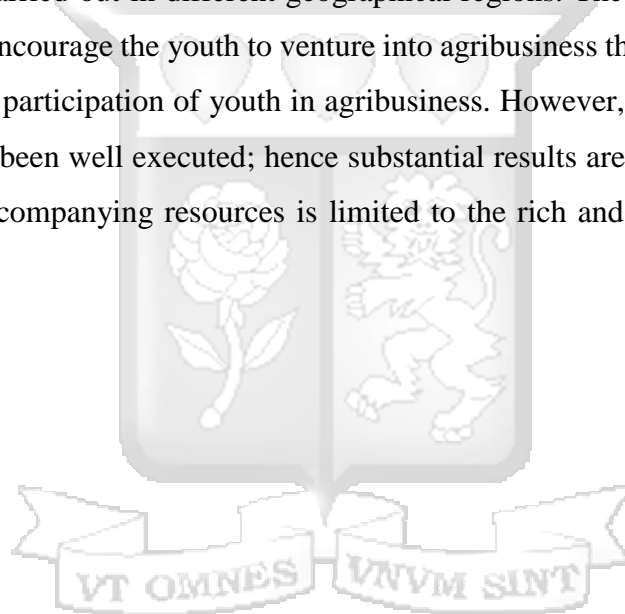


Table 2.1 Summary of Research Gaps

Author	Title	Findings	Research Gap to be Filled	Type of gap
Dolma (2020)	Factors affecting youths' decision to pursue agribusiness and the challenges encountered by small scale young farmers in Bhutan	Youth participation was improved by increased training on agriculture and financial literacy, increasing market access, and availability of information such as taxation policies.	The study focussed on agribusiness involvement in Bhutan and not in Kenya.	Contextual gap
Etela and Onoja (2017)	Impact of e-agriculture incentives and agribusiness incubators on youth involvement in agriculture	The study determined that adopting a national agricultural policy that promotes the establishment of e-agriculture and incubator development is key to incentivizing youth involvement in agriculture.	The study did not access the impact of socio-economic factors on youth involvement in agribusiness.	Conceptual gap
Maritim (2020)	Assessment of factors influencing youth participation in agri-business in Kericho County, Kenya	Findings established that access to credit, access to adequate land, perceived benefits, and attitude affected the youth participation in Agri-business.	The research, however, did not extend to government and technological factors in identifying their effect on youth participation in agriculture.	Conceptual gap
Mukundi (2019)	Association between technological innovation and competitiveness of agribusiness firms in Kenya	The study found that the cost of new technologies, government regulations, standards, and lack of supportive trade agreements limited the competitiveness of agribusiness firms.	The study was focussed on firms, while the current study involves examining the effect of technological factors on youth participation in agriculture.	Conceptual gap
Nyabam, Tarawali and Ijie (2018)	Analysis of IITA youth in agribusiness model as a	The study noted that appropriate policy changes to scale-up and	The research, however, was not limited to youth participation in	Conceptual and methodological gaps

panacea for improve agribusiness in
solving youth sustainable Kenya.
unemployment agriculture are vital
problem in to the involvement
Nigeria of youth in
agribusiness.



2.5 Conceptual Framework

Conceptual framework provides a diagrammatic representation of how the independent variables influence the dependent variable. The framework below shows the interaction between the various factors and participation in agribusiness among the Youth.

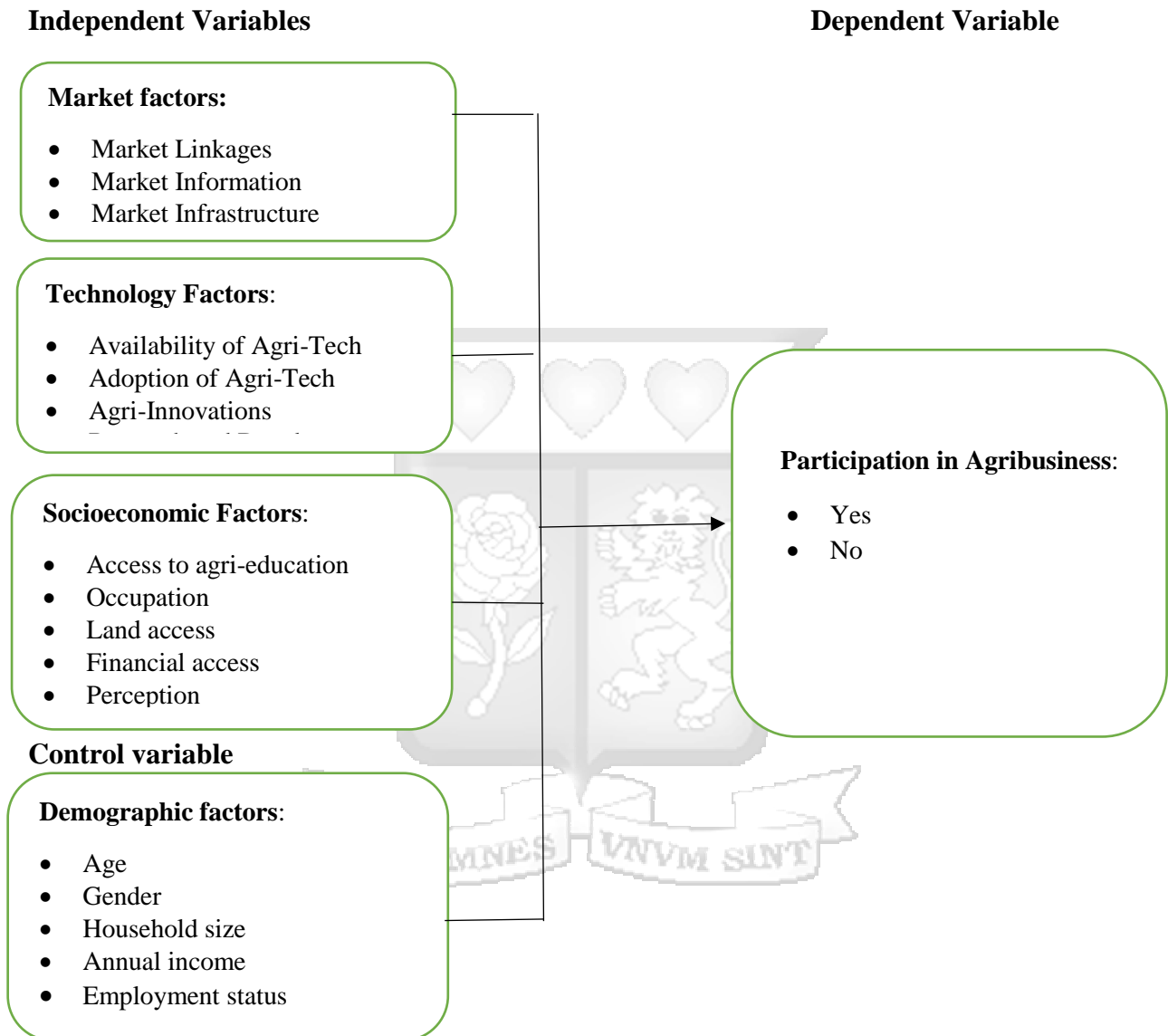


Figure 2.1 Conceptual Framework

Operationalization of the objectives refers to the process of defining variables into measurable factors. (Shuttleworth, 2008) It involves the process that was undertaken in measuring specific variables in the study. The study identifies the dependent variable as the youth participation in agriculture while the independent variables are the market factors, technology factors and socioeconomic factors. The study further considered the control effect of demographic factors

on the participation of youth in agribusiness. The study variables was operationalized as shown in Table 2.2 below.

Table 2.2 Operationalization and Measurement of Variables

Variable	Type of variable	Indicators	Data collection tool	Data analysis	Related literature
Market factors	Independent	<ul style="list-style-type: none"> • <i>Market Linkages</i> • <i>Market Information</i> • <i>Market Infrastructure</i> 	5-point Likert scale (Ordinal Measurement)	Descriptive tests Correlation tests Regression tests	Rogito (2020), Kising'u and Kising'u (2016)
Technology factors	Independent	<ul style="list-style-type: none"> • <i>Availability of Agri-Tech</i> • <i>Adoption of Agri-Tech</i> • <i>Agri-Innovations</i> • <i>Research and Development</i> 	5-point Likert scale (Ordinal Measurement)	Descriptive tests Correlation tests Regression tests	Angwenyi (2016), Njeru (2016)
Socioeconomic factors	Independent	<ul style="list-style-type: none"> • <i>Access to agri-education</i> • <i>Occupation</i> • <i>Land access</i> • <i>Financial access</i> • <i>Perception</i> 	5-point Likert scale (Ordinal Measurement)	Descriptive tests Correlation tests Regression tests	Suvedi, Ghimire and Kaplowitz (2017), Ng'atigwa, Hepelwa, Yami and Manyong (2020)
Youth participation in agriculture	Dependent	<ul style="list-style-type: none"> • <i>Yes</i> • <i>No</i> 	Binary scale (Ordinal Measurement)	Descriptive tests Correlation tests Regression tests	Ng'atigwa, Hepelwa, Yami and Manyong (2020)

2.6 Chapter Summary

Chapter two has provided relevant literature with regard to the topic under study. The review has provided the perspective of different authors and researchers on the effect of agribusiness

education on youth in agribusiness. The relationship between agribusiness education and its effect on youth in agribusiness has been put into perspective as well. The Push-Pull Theory and the Theory of Planned Behavior have been identified as a theory relevant to the study.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is a systematic approach used by a researcher to solve the research problem (Kothari, 2004). This chapter explained the research design, the description of the population, the sampling method, data collection, data analysis, data presentation methods, research quality and the ethical considerations that were considered and adhered to while undertaking the study.

3.2 Research Philosophy

Myers, Well and Lorch (2010) opined that this philosophy is established on information from positive confirmation of known experience instead of introspection or intuition. Positivism philosophy focuses on examining reality and adopts a quantitative approach to examine interaction between variables (Morgan, 2014). The study relied on the positivism philosophy as it allows for the utilization of a quantitative approach in the investigation hence it was ideal in the context of the current research.

3.3 Research Design

A research design is a conceptual structure that guides the research process (Kothari, 2004). Creswell and Creswell (2003) notes that a research design is the overall structure of the research and it the key framework on which all the other elements of the research are mounted on. It presents the conditions under which data was collected and analyzed in order to make meaning out of it in an attempt to answer the research questions and also make informed decisions that are data-driven. The study was quantitative in nature and thus was appropriate to adopt a descriptive research design. Kothari (2004) defines descriptive study as a study aimed at describing the characteristics of a population. This research adopted a descriptive design because it aimed at describing whether there is any effect experienced by youth in agribusiness as a result of agribusiness education.

3.4 Target Population

Kiambu town is located in the central region of Kenya with a total population of 2,417,600 people. The youth population is estimated to be 963,571 which is 39.9% of the total population (KNBS, 2019). The total population of Machakos town is estimated to be 1,007,829 and the youth population is 326,249 which is 32.4% of the total population (KNBS, 2019). The total population for the research was 1,289,820 youth members who was drawn from both towns.

This group was selected for the study as they meet the threshold for the cohort of interest in this research.

3.5 Sampling Design and Sample Size

Sampling frame is a list of all the cases or items in the target population of the research from which a sample was selected (Creswell & Creswell, 2003). The sample frame for this research was drawn from the 1,289,820 youth members within Kiambu and Machakos town who are deemed suitable for involvement in the current study. Sampling entails selecting a given number of subjects from a defined population (Durrheim, 2006). The research used stratified sampling in selecting youth members only within Kiambu and Machakos town. Wilson (2016) advance that stratified random sampling enables the researcher to group the population into homogenous subgroups that show similar characteristics.

The research used the Krejcie and Morgan table in calculating the sample participants of the research. Based on the table the sample for the study was 384 participants. Further, the study utilized convenience random sampling in accessing the study participants from both towns. The sample respondents were distributed in the study as follows;

Table 3.1 Sample Size Distribution

County/Town	Population	Sample Size apportioned
Kiambu	963,571	$963,571/1,289,820 * 384 = 287$
Machakos	326,249	$326,249/1,289,820 * 384 = 97$
Sample Respondents		384

Source: (KNBS, 2019)

3.6 Data Collection Instruments

According Battaglia, Sampling and Lavrakas (2008) appreciates that there are many methods that can be used for collecting data. The choice of a tool and instrument to be used in research depends mainly on the forms and attributes of the research and the expected data and results. The research employed quantitative research data. The quantitative research data was collected using structured research questionnaires. The questionnaires were developed using a 5-point Likert scale with; 5 = representing to a very great extent, 4 = to an extent, 3 = to a moderate extent, 2 = to a low extent and 1 = to a very low extent. The instrument was constructed in line with the study objectives with the dependent variable adopting a binary scale with 1= representing yes and 0 = no.

3.7 Data Collection Procedures

The study adopted a multi-stage process in the data collection process. The questionnaires were mainly delivered through drop and pick method across both Kiambu and Machakos town. The study ensured that all participants were presented with consent forms before involvement in the research. Further, the research obtained all ethical and research approvals in accordance with institutional guidelines. The research tested the reliability and validity of the study instrument by conducting a pretest with 10% of the sample participants, as advised by Creswell and Creswell (2003) who noted that a 10%-30% are adequate for pretesting.

3.7.1 Validity Tests

Internal validity refers to the ability of the identified data collection tool to measure what the researcher intends it to measure (Saunders, Lewis, & Thornhill, 2012). In this study, internal validity of the questionnaire was achieved by ensuring that all research questions are able to measure the intended variables of the research. Content validity refers to the extent to which the measurement device provides adequate coverage of the investigative question (Saunders, Lewis, & Thornhill, 2012). In this study the validity of the content of the questions was achieved by pilot testing the questionnaire with a panel of individuals before the data collection is done. The findings of the pilot test helped to ensure that the content of the questionnaire is relevant to the study.

3.7.2 Reliability Tests

Reliability refers to not only the consistency of findings obtained from the data collection tool of the study but also the robustness of the data collection tool and, whether or not it will produce consistent findings at different times, conditions and with different samples (Saunders, Lewis, & Thornhill, 2012). After achieving internal validity and content validity of the questionnaire reliability was measured through internal consistency. Internal consistency refers to comparing responses to questions in the questionnaire with each other to establish if there is uniformity in the answers given by the respondents. Internal consistency can be measured by calculating Cronbach alpha. Cronbach alpha measures the consistency of responses to a set of questions. If the values of the alpha coefficient are 0.7 and above, this indicates that the answers to the questions in the questionnaire are consistent (Saunders, Lewis, & Thornhill, 2012).

Table 3.2 Reliability Statistics

Variable	Number of items	Cronbach Alpha	Decision
Market factors	7	.805	Accepted for main research

Technology factors	7	.789	Accepted for main research
Socioeconomic factors	7	.722	Accepted for main research
Overall	21	.871	Accepted for main research

3.8 Data Analysis and Presentation

After collecting data, the obtained data was edited to remove errors and to ensure completeness. Data was afterwards coded in readiness for analysis. Data analysis on the effect of agribusiness education on youth in agribusiness was done using measures of central tendency i.e., mean and measures of dispersion i.e., standard deviation. The study conducted Spearman correlation to determine the direction of the relationship between the independent variable and the dependent variable. Further, analysis of the data was done using the Probit regression analysis model. The regression model was used to model the relationship between the independent variable and the dependent variable (Statgraphics, 2016). After using the SPSS statistical software to fit the regression model, the analyzed results were used to identify if the independent variable has a significant relationship with the dependent variable. Presentation of the results was done through pie charts, tables and graphs. The regression analysis model was in the form:

$$YP = \alpha + \beta_1 SF + \beta_2 MF + \beta_3 TF + \beta_4 DF + \epsilon \dots \dots \dots \text{Equation 3.1}$$

Where;

YP = represents the youth participation in agribusiness in Kiambu and Machakos

SF = represents the socioeconomic factors

MF = represents the market factors

TF = represents the technology factors

DF = represents the demographic factors

$\beta_1 - \beta_4$ represents the coefficients of the study independent variables

ϵ = represents the error term for the regression model

3.9 Ethical Considerations

The study ensured confidentiality, anonymity and truthfulness are achieved during the research. All information obtained from the respondents during the research was kept confidential. The research questionnaires did not require the respondent to provide personal information such as name, gender and identification details. The researcher sought permission from relevant authorities and explained the purpose of the study to the participants. The data collected from

the study was kept confidential and the researcher kept their personal integrity. The study made an effort to avoid any form of physical or psychological harm to respondents by seeking prior permission to engage with them on voluntary basis.



CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The fourth chapter presents the results of the analysis of the collected survey data drawn from youth drawn from Kiambu and Machakos town. The focus is on the quantitative analysis of the collected research data. The chapter presents the demographic information on the participants, the descriptive analysis, correlation tests and the results of the regression analysis.

4.2 Demographic Information

The demographic section of the analysis focused on the response obtained from the field work and the background profile of the respondents involved in the research.

4.2.1 Response Rate

The study's aim was to collect research data from a sample of 384 youth members drawn from Kiambu and Machakos towns. Out of the response being sought in the study, the research was able to garner a 97% response rate ($n = 374$), with only 3% ($n = 10$) of the participants not included in the research during the period for data collection. The response rate which was above 60%, was sufficient for utilization in the quantitative survey. Kothari (2004) advocates that responses rate above 70% are acceptable for data analysis and can be utilized to represent the entire population of interest.

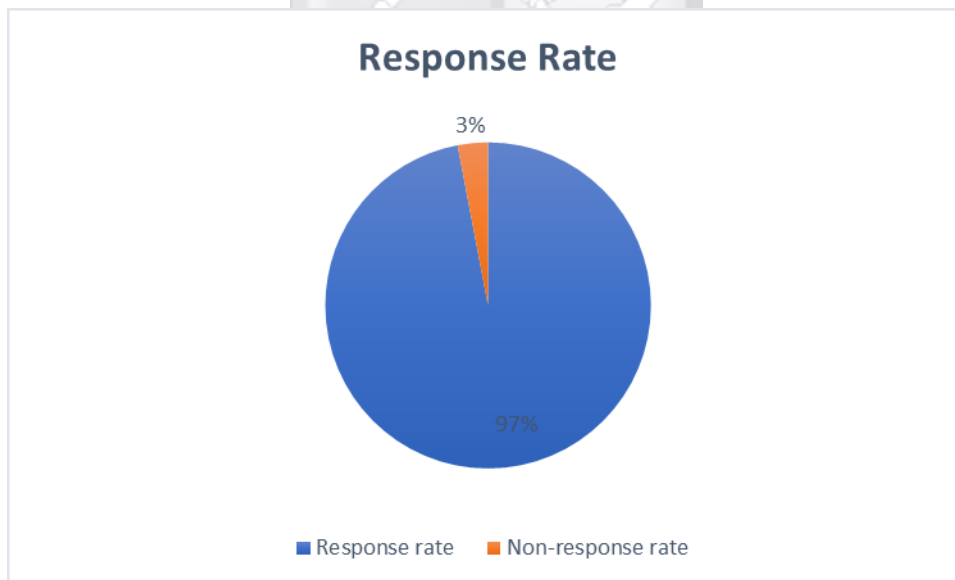


Figure 4.1 Response Rate

Source: Research Data (2023)

4.2.2 Gender of Respondents

Results showed that the majority of the participants of the study 53% (n = 198), identified as male with only 47% (n = 176) of the interviewed respondents were female. The findings implied there was almost equal representation by gender in the research; thus results provided can provide relevant data on which gender is involved in the agribusiness within the towns.

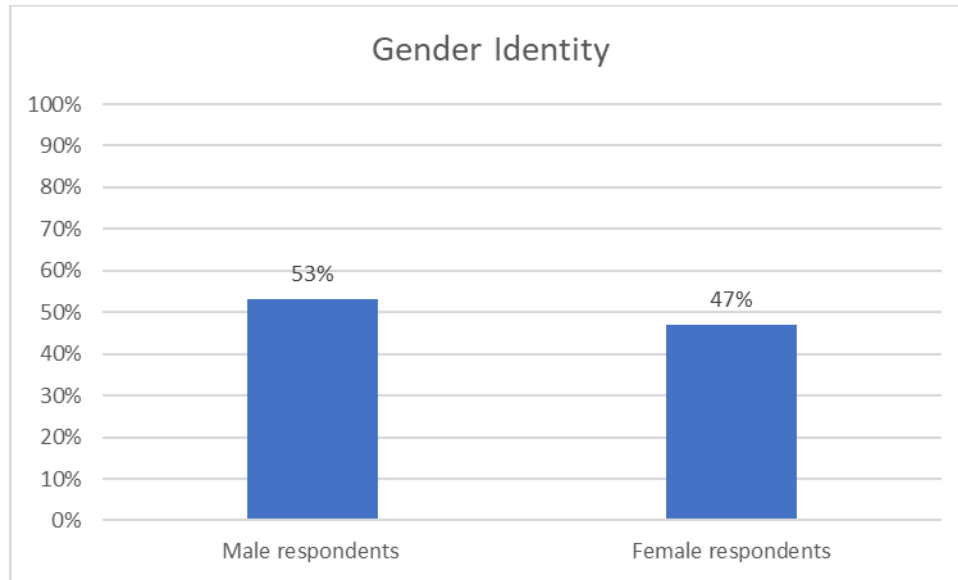


Figure 4.2 Participants Gender

Source: Research Data (2023)

4.2.3 Household Characteristics

Further analysis was conducted focusing on the age, education, income and household profile of the respondents and results are shown in Table 4.1.

Table 4.1 Individual Household Characteristics of Respondents

	Age	Education	Household size	Income
Mean	25.98	14.29412	5.834225	170605.5
Median	26	14.00000	6.000000	150000.0
Maximum	35	22.00000	13.00000	600000.0
Minimum	18	5.000000	2.000000	0.000000
Std. Dev.	3.877	1.928791	1.580479	128514.4
Skewness	.210	-0.209477	0.861605	0.933230
Kurtosis	-3.46	5.987624	4.816725	3.621902
Sum	9715	5346.000	2182.000	52887700
Observations	374	374	374	310

Source: Research Data (2023)

On average, the results showed the participants included in the survey were at least 25.98 years of age, with the oldest recorded age at 35 years with a minimum of 18. This revealed that the respondents involved fit the prescribed age definition of youth, and thus, their inclusion in the survey was valid. The analysis showed that, on average, the youth members involved in the research had spent at least 14 years in school with a minimum of 5 years of schooling. This implied that most of the participants had at least attained a post-secondary school education owing to the years spent on education attainment. It was also revealed that the highest income accruing from agribusiness was 600,000 with a mean of 170,605 Ksh. which is an indicator of the viability of agribusiness as an alternative to income-earning for the majority of youth who do not have formal employment. The findings showed that the mean household size was at least six people indicating that most of the households were fairly small and thus could reasonably provide labour for the agribusiness ventures.

4.2.4 Occupation of Respondent

The survey was interested in the current occupation status of the respondents, and analysis demonstrated that the majority of the respondents 51% (n = 189) had some form of informal employment, 25% (n = 94) had formal employment, only 24% (n = 91) of the youth were unemployed. These results reveal that there is an increase in the uptake of self-employment and engagement in informal employment among the youth within the towns. The analysis also points to the high unemployment rate among the youth, which has resulted in this population bracket seeking other forms of income generation opportunities to sustain their livelihood.

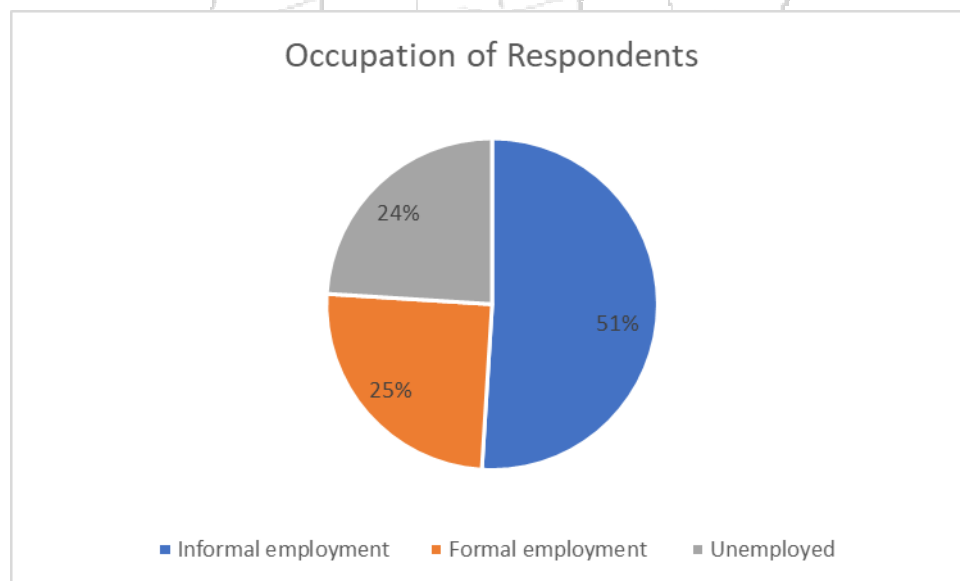


Figure 4.3 Occupation of Respondents

Source: Research Data (2023)

4.3 Descriptive Analysis

The employed research questionnaire was structured in nature, thus requiring the application of descriptive techniques to provide a summary of the collected data. The main approach used in this section comprises of percentages, frequencies, means and standard deviation. The findings are presented on the basis of the study objectives.

4.3.1 Youth Participation in Agribusiness

It was revealed in the analysis that the majority of the respondents 66% (n = 246) of the respondents, were involved in agribusiness, with 34% (n = 128) not partaking in agribusiness activities. These findings implied that the majority of the youth in the two towns have turned into agribusiness as an income-generating activity. The results also showed that all the 246; youth who were involved in agribusiness had accessed credit facilities to aid in their agribusiness. The results demonstrate there is an improved in credit accessibility for small agribusiness, which can be critical to the expansion of the agricultural sector. Further, this ease in credit accessibility can be critical to the youthful farmers incorporating new technologies, better crops and afford better inputs for their activity.

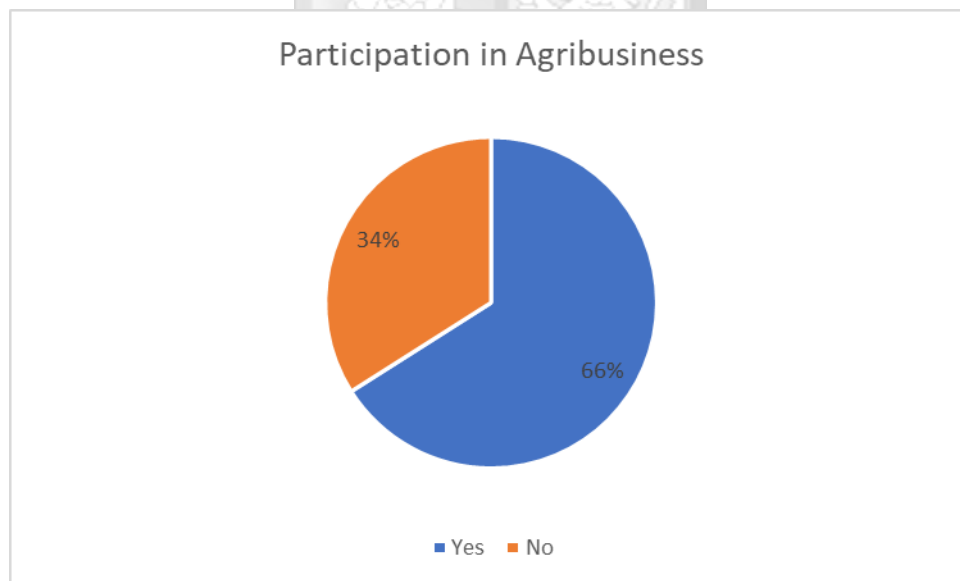


Figure 4.4 Youth Participation in Agribusiness

Source: Research Data (2023)

The youth involved in farming also provided responses on the type of agribusiness activity they conduct and the analysis is provided in Table 4.2

Table 4.2 Type of Agribusiness Activity

Type of Agribusiness Activity	Count	Percentage
Agri-Chemicals Supply	12	4.88
Agricultural Farming	86	34.96
Aquaculture Farming	4	1.63
Horticultural Farming	19	7.71
Livestock Farming	55	22.36
Seed Supply	35	14.23
Supply Of Farm Machinery	3	1.22
Supply Of Farm Produce	32	13.01
Total	246	100

Source: Research Data (2023)

The findings above showed that most of the youth involved in agribusiness were involved in agricultural farming 35% (n = 86), 22% (n = 55) livestock farming, 14% (n = 35) seed supply, 13% (n = 32) supplied farm produce with only 5% (n = 12) agri-chemicals supply. The results demonstrate that there is diversity in the agribusiness activity being conducted within Kiambu and Machakos town which is essential in ensuring there is no overreliance on one activity among the farmers and a stable value chain can be maintained.

4.3.2 Market Factors

The study analyzed market factors within their area and the responses obtained provided by the youth members in the two towns are shown in Table 4.3

Table 4.3 Descriptive Analysis of Market Factors

	N	Sum	Mean	Std. Deviation
I have knowledge on structures in place to support small business linkage to larger and global agricultural markets	374	884.00	2.3636	1.00207
I have been able to access readily available information on the various agricultural market conditions	374	927.00	2.4786	1.10486
I am aware of the market facilities developed to support agribusiness within our area	374	937.00	2.5053	1.13852
I am have seen adequate road linkages being developed to support accessibility to markets for agribusiness ventures	374	942.00	2.5187	1.08533
I have access to the market infrastructures available in our area	374	987.00	2.6461	1.17694
I have knowledge on readily available market for agricultural products to support involvement in agribusiness	374	924.00	2.4706	1.51239

I have knowledge on market quality and standards regarding agribusiness projects	374	964.00	2.5775	1.13588
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Source: Research Data (2023)

Analysis shows to a moderate extent (mean = 2.646, dev = 1.176) the youth members have access to the market infrastructures available in our area. The study noted that to a moderate extent (mean = 2.518, dev = 1.085) the youth have seen adequate road linkages being developed to support accessibility to markets for agribusiness ventures. It was further established that to a moderate extent the respondents have knowledge on market quality and standards regarding agribusiness projects (mean = 2.577, dev = 1.135). Results showed that to a small extent (mean = 2.470, dev = 1.512) the youth have knowledge on readily available market for agricultural products to support involvement in agribusiness.

4.3.3 Technology Factors

The researcher presented the youth members with various statements on technology factors and the descriptive summary is provided in Table 4.4

Table 4.4 Descriptive Analysis of Technology Factors

	N	Sum	Mean	Std. Deviation
I have knowledge and access to new agricultural technologies within our area	374	919.00	2.4572	1.18165
I would accept and adopt any available of agricultural technologies	374	1086.00	2.9037	1.03884
I have seen an improvement in the utilization of modern technologies within agribusiness	374	1010.00	2.7005	1.13730
I have seen notable increase in investments towards research and development in agribusiness	374	1001.00	2.6909	1.05566
I have access to readily available information on the various agricultural technologies within our area	374	951.00	2.5428	1.11871
I have access to technical assistance for most farmers within our area	374	886.00	2.3690	1.16596
I have access to modern agricultural machinery for agribusiness owners	374	824.00	2.2151	1.03418

Source: Research Data (2023)

Respondents revealed to a moderate extent (mean = 2.903, dev = 1.038) they would accept and adopt any available agricultural technologies. Findings noted that, to a moderate extent, the respondents had seen an improvement in the utilization of modern technologies within agribusiness (mean = 2.700, dev = 1.137). The results indicated that, to a moderate extent, there is a notable increase in investments towards research and development in agribusiness (mean = 2.690, dev = 1.165). Further respondents showed to a small extent they have access to modern agricultural machinery to agribusiness owners (mean = 2.215, dev = 1.034). To a small extent, the youth noted they have knowledge and access to new agricultural technologies within our area (mean = 2.457, dev = 1.181).

4.3.4 Socioeconomic Factors

The researcher further focused on the socioeconomic factors among the youth within the two towns, and the analysis is presented in Table 4.5

Table 4.5 Descriptive Analysis of Socioeconomic Factors

	N	Sum	Mean	Std. Deviation
I have been able to access financial assistance to setup agribusiness	374	745.00	1.9920	1.32917
Availability of adequate land has affected the youth participation in agribusiness projects	374	964.00	2.5775	1.10234
Within our area have been able to access relevant agri-education information that supports participation in agribusiness	374	945.00	2.5267	1.17985
I have access to employment opportunities which hinder their involvement in agribusiness	374	983.00	2.6283	1.26336
I have a positive perception of engaging in agribusiness activity	374	1184.00	3.1828	.92810
I perceive agribusiness venture as adequate source of income	374	1200.00	3.2086	1.03262
I perceive agribusiness activities to be a costly venture	374	934.00	2.4973	1.35960

Source: Research Data (2023)

The participants revealed that to a moderate extent (mean = 3.208, dev = 1.032) they perceived agribusiness venture as adequate source of income. Analysis showed that to a moderate extent the youth have a positive perception of engaging in agribusiness activity (mean = 3.182, dev =

.928). Results showed to a moderate extent the youth within the area have been able to access relevant agri-education information that supports participation in agribusiness (mean = 2.526, dev = 1.179). To a moderate extent (mean = 2.577) the respondents noted that the availability of adequate land has affected the youth participation in agribusiness projects. To small extent (mean = 2.497) the respondents noted that they perceive agribusiness activities as a costly venture.

4.4 Correlation Analysis

Correlation analysis was carried out to establish the strength and direction of the relationship between the selected factors and youth participation in agribusiness and findings are presented in Table 4.6 below.



Table 4.6 Correlation Analysis

			Participation Agribusiness	Market Factors	Technology Factors	Socioeconomic Factors	Age of Respondent	Household size	Education years	Annual Income	Male	Female	Formal Employment	Informal Employment	Unemployment		
Spearman's rho	Participation Agribusiness	Correlation Coefficient	1.000														
		Sig. (2-tailed)	.														
		N	374														
	Market Factors	Correlation Coefficient	.423**	1.000													
		Sig. (2-tailed)	.000	.													
		N	374	374													
	Technology Factors	Correlation Coefficient	.442**	.880**	1.000												
		Sig. (2-tailed)	.000	.000	.												
		N	374	374	374												
	Socioeconomic Factors	Correlation Coefficient	.470**	.817**	.795**	1.000											
		Sig. (2-tailed)	.000	.000	.000	.											
		N	374	374	374	374											
	Age of Respondent	Correlation Coefficient	-.020	-.244**	-.235**	-.228**	1.000										
		Sig. (2-tailed)	.697	.000	.000	.000	.										
		N	374	374	374	374	374										
	Household size	Correlation Coefficient	-.036	-.012	.017	.050	.057	1.000									
		Sig. (2-tailed)	.492	.818	.748	.331	.275	.									
		N	374	374	374	374	374	374									
	Education years	Correlation Coefficient	.335**	.296**	.297**	.359**	-.029	-.011	1.000								
		Sig. (2-tailed)	.000	.000	.000	.000	.572	.833	.								
		N	374	374	374	374	374	374	374								
	Annual income	Correlation Coefficient	-.122*	-.318**	-.256**	-.309**	.157**	-.003	-.158**	1.000							
		Sig. (2-tailed)	.031	.000	.000	.000	.006	.958	.005	.							
		N	310	310	310	310	310	310	310	310							
Male	Correlation Coefficient	.043	-.078	-.077	-.104*	.104*	-.032	-.045	.020	1.000							
	Sig. (2-tailed)	.412	.133	.139	.044	.045	.541	.383	.724	.							
	N	374	374	374	374	374	374	374	310	374	374						

Female	Correlation Coefficient	-.043	.078	.077	.104*	-.104*	.032	.045	-.020	-	1.000			
	Sig. (2-tailed)	.412	.133	.139	.044	.045	.541	.383	.724	1.000**	.	.		
	N	374	374	374	374	374	374	374	310	374	374			
Formal Employment	Correlation Coefficient	.132*	.089	.094	.093	.139**	-.034	.313**	-.147**	.089	-.089	1.000		
	Sig. (2-tailed)	.011	.086	.068	.072	.007	.510	.000	.010	.084	.084	.		
	N	374	374	374	374	374	374	374	310	374	374	374		
Informal Employment	Correlation Coefficient	-.037	-.111*	-.154**	-.144**	.072	.091	-.231**	.020	-.043	.043	-.586**	1.000	
	Sig. (2-tailed)	.471	.032	.003	.005	.163	.078	.000	.726	.402	.402	.000	.	
	N	374	374	374	374	374	374	374	310	374	374	374	374	
Unemployment	Correlation Coefficient	-.090	.039	.085	.074	-.225**	-.072	-.047	.150**	-.040	.040	-.329**	-.573**	1.000
	Sig. (2-tailed)	.082	.447	.102	.153	.000	.165	.366	.008	.444	.444	.000	.000	.
	N	374	374	374	374	374	374	374	310	374	374	374	374	374

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

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

Source: Research Data (2023)



The correlation tests on the first variable established there was a moderate positive and significant relation between market factors and the youth participation in agribusiness in Kiambu and Machakos town ($r(374) = .423^{**}, p = .000 < .05$). The results on the second objective revealed there was a moderate positive and significant relation between technology factors and the youth participation in agribusiness in Kiambu and Machakos town ($r(374) = .442^{**}, p = .000 < .05$). Analysis of the third variable established a moderate positive and significant relation between socioeconomic participation and the youth participation in agribusiness in Kiambu and Machakos town ($r(374) = .470^{**}, p = .000 < .05$).

The correlation analysis of the demographic factors showed an insignificant relation between gender identity and the youth participation in agribusiness in Kiambu and Machakos town ($p > .05$). Results established that formal employment had a weak positive and significant relation between and the youth participation in agribusiness in Kiambu and Machakos town ($r(374) = .132^*, p = .011 < .05$). The study further demonstrated a weak positive and significant relation between years of education and the youth participation in agribusiness in Kiambu and Machakos town ($r(374) = .335^{**}, p = .000 < .05$). It was also revealed that age of respondents, household income level, household size, informal and formal employment had weak positive and insignificant relation between with the youth participation in agribusiness in Kiambu and Machakos town ($p > .05$).

4.5 Regression Analysis

The dependent variable for the study youth participation in agribusiness was binary in nature which resulted in the utilization of Probit regression in the analysis of the magnitude of effect of selected factors on the dependent variable. The findings are shown in this section.

Table 4.7 Omnibus Test of the Model

Log Likelihood	Number of obs	LR chi2(10)	Prob > chi2	Pseudo R2
-137.67938	310	134.55	0.0000	0.3283

Dependent Variable: Have you ever participated in agribusiness activity

Model: (Intercept), Market Factors, Technology Factors, Socioeconomic Factors, Male, Female, Formal Employment, Informal Employment, Unemployment, Age of Respondent, household size, education years, annual income

a. Compares the fitted model against the intercept-only model.

The results of the Omnibus showed a likelihood ratio $\chi^2 = 134.55, N = 310, \text{Prob} > \chi^2 = .000$ which was less than the critical value of 0.05. This was an indication that the intercept variables adopted in the study were significant showing that there was a significance of the

several parameters considered in the research model as compared to the base model without any predictors. The Pseudo $R^2 = .3283$ indicating that 32.83% of the changes in youth participation in agribusiness can be predicted by the selected factors (market, technology, socioeconomic and demographic).

Table 4.8 Summary of Marginal Effects

Average marginal effects					Number of obs = 310	
Expression: Pr (Participation Agribusiness), predict ()						
Variable	dy/dx	std. err.	z	P> z	[95% interval]	conf.
Market Factors	.0057	.0090	0.64	0.525	-.0120	.0235
Technology Factors	.0292	.0111	2.62	0.009	.0074	.0511
Socioeconomic Factors	.0317	.0091	3.48	0.000	.0138	.0496
Age	.0100	.0057	1.75	0.080	-.0012	.0213
Household Size	-.0496	.0176	-2.81	0.005	-.0843	-.0149
Education	.0568	.0135	4.20	0.000	.0303	.0834
Income	2.12	1.80	1.18	0.239	-1.41	5.65
Male	.0857	.0445	1.92	0.054	-.0016	.1731
Formal Employment	.0376	.0723	0.52	0.603	-.1042	.1795
Informal Employment	.0350	.0587	0.60	0.551	-.0800	.1501

Source: Research Data (2023)

The results of the first objective effect of market factors on youth participation in agribusiness within Kiambu and Machakos town had a coefficient; $\beta_1 = .0057$, $z = .402$, $P>|z| = .525 > .05$. This implied there was no statistically significant effect of market factors on youth participation in agribusiness.

The second objective focused on the effect of technology factors on youth participation in agribusiness within Kiambu and Machakos town which revealed a coefficient $\beta_2 = .0292$, $z = 2.62$, $P>|z| = .009 < .05$. The results established there was a positive and significant effect of technology factors on youth participation in agribusiness. Changing the level of technology factors by a unit will positively contribute to youth participating in agribusiness by a factor of .0292.

The third objective reviewed the effect of socioeconomic factors on youth participation in agribusiness within Kiambu and Machakos town which revealed a coefficient $\beta_3 = .0317$, $z = 3.48$, $P>|z| = .000 < .05$. The results established there was a positive and significant effect of socioeconomic factors on youth participation in agribusiness. Changing the level of socioeconomic factors by a unit will positively contribute to youth participating in agribusiness by a factor of .0317.

The fourth variable considered in the analysis were the demographic factors and findings revealed there was no significant effect of gender, employment status, age and level of income on youth participation in agribusiness within Kiambu and Machakos town which revealed a coefficient.

Analysis of the household size by number of individuals revealed a coefficient $\beta = -.0496$, $z = -2.81$, $P > |z| = .005 < .05$ which was significant showing that increasing the size of the household will result in a negative effect on youth participation by a unit of $-.0496$. The results on the education attainment of the respondents by age resulted in a coefficient $\beta = .0568$, $z = 4.20$, $P > |z| = .000 < .05$. The results established there was a positive and significant effect of education attainment on youth participation in agribusiness. The results demonstrated that the more years of education the respondents attained would significantly contribute to youth participation in agribusiness by a $.0568$



CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This is the study's last chapter, and it presents the study's summary of findings, the discussion and conclusion that emerges from the findings. The study then concludes with recommendations that can be implemented to increase the participation of youth in agribusiness.

5.2 Summary of Findings

This study sought to the factors that influence the performance of the youth in agribusiness value chain creation in Kiambu and Machakos Towns, Kenya. Specifically, the study sought the degree to which market factors, technology factors and socioeconomic factors influence youth participation in agribusiness. Towards this end, the study adopted a descriptive design that utilized a pragmatic approach in determining the relationship between the dependent and independent variables. The study relied on the Spearman correlation methodology that utilized the Probit regression analysis model in the analysis. The findings from the analysis were that;

The analysis revealed that out of the respondents (n = 374), the majority of the participants were male (n = 198), at least 25.98 years of age, well-educated and with some form of employment, with 198 of the total respondents being informally employed. This finding indicates that the respondents fall within the study's scope, that they are well educated and can make informed analyses of the factors that influence their decision to partake in agribusiness. The majority of the respondents also indicated that they were making a decent income from agribusiness, averaging KES 170,000 each year. Of these, 246 had accessed credit services to increase investment in their agribusinesses and incorporated new agricultural technologies, crops and farm input.

Regarding the type of business the youth were engaged in, it became evident that the majority of the youth were involved in agriculture farming, followed by livestock rearing, and then fish breeding. Further, a smaller number of youths participated in agricultural value chain creation, working as suppliers of seeds, transport of farm produce, and agrichemicals. This finding indicates the degree of diversity and potential for growth and innovation presented by agribusinesses.

The first objective of the study sought to determine the effect of market factors on the youth participation in agribusiness in Kiambu and Machakos town, and the analysis findings were

that market factors only have a moderate positive influence on youth participation in agribusiness ($r(374) = .423^{**}$, $p = .000 < .05$). Regression results were that there was no statistically significant effect of market factors on youth participation in agribusiness.

The second objective of the study was to the effect of technology factors on youth participation in agribusiness in Kiambu and Machakos town, and the analysis findings were that technology factors have significant influences on youth participation in agribusiness ($r(374) = .442^{**}$, $p = .000 < .05$). Regression results were that technology factors have a statistically significant effect on youth participation in agribusiness ($P > |z| = .009 < .05$). Changing technology factors by a single unit would increase youth participation in agribusiness by .0292.

The third objective was on socioeconomic factors and their influence on the participation of the youth in agribusiness, and the findings were that socioeconomic factors have a moderately significant effect on youth participation in agribusiness ($r(374) = .470^{**}$, $p = .000 < .05$). Regression findings showed a significant effect ($P > |z| = .000 < .05$), indicating increasing the value of socioeconomic factors by a single unit would result in a .0317 increase in youth participation in agribusiness.

Further, the study also established that demographic factors such as gender, employment status, age, and level of income have insignificant impacts on youth's participation in agribusiness. On the other hand, the size of the household and the academic achievement of the youth were determined to have significant influences on the likelihood of participating in agribusiness. Youth from larger families were less likely to participate in agribusiness, while more educated youth were more likely to participate in agribusinesses.

5.3 Discussion of Findings

5.3.1 Market Factors and Youth Participation in Agribusiness

This study sought the influence of market factors on youth participation in agribusiness, and the results revealed that market factors do not have significant influences on youth participation in agribusiness. These findings contradict Everett Lee's Push-Pull theory which in agriculture posits that factors such as access to quality markets and information would serve as an enticing determinant of participation. They also fail to agree with observations made by Dolma (2020), whose analysis revealed that limited access to the market and market information, inadequate financing as well as poor skill development, and access to land all have significant influences on agri-business participation. The expectation of this research was that market factors would have significant influences on the youth's involvement in agribusinesses as it would improve

the information they have on agribusiness value chains, access to agribusiness channels as well as market linkages.

The researcher observed minimal agreement that the respondents were able to access readily available information on the various agricultural market conditions, that they have knowledge of readily available markets for agricultural products to support involvement in agribusiness, and that they have knowledge of structures in place to support small business linkage to larger and global agricultural markets. These observations were also made in the study by Ethiopia's Moreda (2020), who determined that limited access to land resources, market information, finances, as well as agricultural tools contributes to the low involvement of youth in agribusiness. However, a significant number of the respondents indicated that they have access to the market infrastructure within their locale, that they have relevant knowledge of market quality and standards regarding agribusiness projects and that they have witnessed investment in road linkages and infrastructure that promises to support market accessibility. Kising'u and Kising'u (2016) show how market linkages, micro-credit access, socio-capital networks, and awareness of market information were influential in promoting youth participation in agricultural value chains.

In the Philippines, Lumen (2020) observed that youth were more willing to invest in agricultural production at a certain level of infrastructure development and that the existence of extension officers and market facilities served as drivers of agri-business participation. In addition to the factors indicated above, Nigeria's Nyabam, Tarawali and Ijie (2018) revealed that income from agricultural activities, access to the market and awareness of agricultural activities were instrumental to increasing participation in agribusiness. The researcher added that poor perception and attitude toward agribusiness among the youth negatively impacted decisions to participate in agribusinesses.

5.3.2 Technology Factors and Youth Participation in Agribusiness

The second objective specified the impact of technology factors on youth participation in agribusiness, showing there was a positive and significant relationship. Theoretically, the youth would be encouraged to participate in agribusinesses if they have easy access to agricultural income-generating technologies, agricultural innovations, and research in agricultural value creation. According to the findings from the research, technology factors do, in fact, have significant influences on the youth's intention to participate in agri-businesses. Mukundi (2019) made similar observations in their analysis of the association between technological innovation and the competitiveness of agribusiness firms in Kenya. The ease of introducing

marketing technologies, weather monitoring systems, and improved seedlings was singled out as important determinants of agri-business competitiveness and attractiveness as a business venture.

The respondents were in agreement that they are enthusiastic about new technologies that would increase the attractiveness of the agricultural sector and that they would utilize these technologies should the opportunity arise. This was confirmed with another agreement that there has been an increase in investment in agri-research and development and the utilization of modern technologies within the agribusiness space. These observations were made in the study by Etela and Onoja (2017), which opined that the existence of a national agricultural policy is key to stimulating innovation within the space. The researchers showed how policies directing the coordination between institutions of higher education and farmers would assist in e-agriculture and incubator development, in turn incentivizing the youth to participate in agribusinesses.

The researcher also determined that the youth have easy access to market information which paints agri-businesses in a positive light and encourages their participation. Kinyangi (2014) makes similar observations in research that revealed a positive influence of access to credit facilities, technology training programs and agricultural extension services on participation in agri-business value chain creation. The researcher was adamant that the quality of extension services has significant influences on continued participation in agribusiness value creation. However, there was also minimal agreement that agribusiness owners have access to modern agricultural machinery, access to technical assistance and readily available information on the various agricultural technologies in use within their locale. According to Mukundi (2019), factors such as the high cost of technological innovations in the agribusiness sector, poorly developed standards and regulatory control, as well as limited supportive trade agreements have limited agribusiness farmers' ability to adapt agricultural machinery and innovations.

In the study by Angwenyi (2016), poor government commitment had resulted in a negative perception of agribusiness among the youth, limited the development of credit facilities specific to agribusiness projects as well as career guides in schools, which ultimately resulted in a lower number of the youth finding agribusiness ventures to be profitable. The researcher Njeru (2016) had earlier affirmed that providing access to land at affordable prices, financial assistance, and modern agricultural tools would increase the participation of youth in agribusinesses.

5.3.3 Socioeconomic Factors and Youth Participation in Agribusiness

The third objective was on the effect of socioeconomic factors on youth involvement in agribusiness, and the findings revealed a positive and significant association. These factors are identified in the push-pull theory as the main drivers of agribusiness participation and were observed in the study by Suvedi, Ghimire and Kaplowitz (2017) as determinants of agribusiness participation. The researchers opined that membership in farmers' associations and access to agribusiness education through extension services offered as part of government initiatives were key to the youth's agribusiness participation as well as the adoption of agricultural technologies among farmers. This study conforms to the researcher's expectations, given the study hypothesized that socio-economic factors such as the societies' perceptions of agriculture, access to farm inputs and assets, finances, and income should have significant influences on the youth's intention to participate in agribusiness ventures.

The study's respondents further pointed out that they have a positive perception of agribusiness activities and that they perceive agribusiness ventures to be adequate sources of income. In the study by Laven and Pyburn (2015), the government was determined to play a significant role in initiating women empowerment programs, facilitating agri-business knowledge development, funding as well as certification of operating standards, all key to increasing the sector's attractiveness. Regarding employment opportunities, respondents were in agreement that access to other employment opportunities does not hinder their involvement in agribusiness, attesting to the potential of agribusiness as an income-generating activity.

However, there was also minimal agreement that the youth have been able to access relevant agri-education information that supports participation in agribusiness, with some respondents indicating that they perceive agribusiness activities to be costly ventures and that they have not been able to access adequate financial assistance to setup their agribusinesses. In the research by Ng'atigwa, Hepelwa, Yami and Manyong (2020) that specified youth involvement in horticulture agribusiness, these factors were ascertained to be key to triggering agribusiness involvement. The researchers also indicated that the youth need to have management innovation, quality materials and land to engage in agri-business ventures. In the study by Maritim (2020), credit access, perceived benefits, and attitude influenced participation in Agri-business.

5.4 Conclusion

The study sought the factors that influenced the participation of the youth in agribusiness and specified the influence of market, technology and socio-economic factors. The study concludes

that the variables under investigation have significant influences on the decision to participate in agribusiness. Regarding the first objective, the study concludes that market factors have an insignificant influence on the youth's participation in agribusiness. Conclusions were that knowledge of market structures, access to markets and market information, infrastructure and linkages insignificantly influences participation in agribusiness.

The second objective sought after the influence of technology factors on participation in agribusiness, with the findings leading to the conclusion that the variables examined under technology factors have the most significant impact on agribusiness participation. Agricultural technologies identified include agricultural machinery, seed varieties, innovative processes as well as marketing technologies. Conclusions were that knowledge and access to agricultural technologies, machinery and technical assistance all have positive influences on decisions to participate in agricultural businesses.

Regarding the third objective, which was on socioeconomic factors, the study concludes that they have significant influences on participation in agribusiness ventures. The conclusions were that access to production factors such as land, agri-education information and financial assistance all affect the participation of the youth in agribusiness. Findings on the demographic factors led to the conclusion that age, income, and gender do not significantly influence participation in agribusiness. However, the size of the household and education level significantly influenced the participation in agribusiness.

5.5 Recommendation

The study findings provide evidence that the youth are highly enthusiastic and motivated to participate in agribusinesses and that under the right conditions, more youth will get involved in the country's biggest income earner. However, stimulating youth involvement in agribusiness necessitates a holistic policy package involving all stake holders in the country, especially the youth who are currently under-represented. These policies have to address youth-specific barriers, market barriers, technology, and socio-economic barriers.

The first recommendation is for the country to position the youth at the epicentre of the drive towards the transformation of the agribusiness sector. The country has to actively engage the youth in the development of food systems and link any efforts with those aimed at achieving Sustainable development goals. The study calls on the national government to ensure proper coordination between the ministries and departments of agriculture and education in syllabus development and training, as well as foster and promote agriculture clubs in institutions of

learning. Such initiatives will improve the perception of agribusiness to the youth and encourage their participation in agribusiness. Given agribusinesses are viable income-earning activities, the study recommends labour policies be developed to increase youth employability in agribusinesses through interventions such as training and skills development, job matching, entrepreneurship coaching and incubators.

Furthermore, the study recommends that the government also plays a key part in stimulating agribusiness value creation by organizing more agricultural seminars and promoting benefit-maximizing opportunities to those lacking the necessary skills to create value within the agribusiness chain. The study also recommends that the government specifies that certain programs that deal with skill development in financial management and marketing be targeted towards the youths located in the rural regions of arid and semi-arid regions to ensure that these have adequate knowledge on the best and up-to-date agricultural methods, technologies and machinery as well as can properly compete in the digital markets.

In addition, the study recommends that the government engages the youth through agricultural extension programs organized through a self-help group framework that would see joint efforts at agribusiness value creation, reduce risk and encourage diversification. The government can demonstrate their support to the youth by creating competitions, initiatives and programs aimed at challenging the youth to become creative and, as a policy matter, provide awards to successful youth farmers. Such programs would increase awareness of the value of agribusinesses and increase the sector's competitiveness as an income-generating activity. In relation, this study recommends the creation of a supportive policy environment for youth-led start-up initiatives by instituting tax breaks and incubation hubs that would help youth build their capacity to better engage competitive market places. Subsidy programs aimed at supporting the transition from school to work and labour-markets should also be instituted and provided to all youth regardless of their ethnicity, religion or gender.

The also calls on the government to streamline financial regulations to increase the sector's development. The development of regulations on loan products designed specifically for the youth, for instance, would increase lenders' ability to design products tailored to meet the needs of young farmers as well as programs to aid youth projects. Further, the development of agricultural insurance for youth farmers will reduce the risk perception of agribusiness that the youth have and encourage more youth to become involved in agribusiness value creation. Policies on taxation and product innovation, seed varieties, fertilizers as well as resource

utilization should also be streamlined to encourage the development of innovative products such as marketing platforms and e-payment platforms.

The study also recommends that the community be directly involved in encouraging the youth in agriculture. They can do this by donating parcels of land to youth, offering farm machinery and even financial assistance and training to ensure even those in urban areas have a grasp of agribusiness-added activities such as food processing and packaging. The study also calls on the regular organization of workshops, training courses, seminars and demonstration farms to motivate and spur interest in the youth currently disinterested in agriculture. Another recommendation is for increased marketing and financing of agribusiness as a vital component of the economy to increase its attractiveness to foreign investors who can bring in newer farming methods, technologies and expertise.

5.6 Suggestion for Further Research

This study investigated the factors that drive the youth to participate in agribusiness value creation in arid and semi-arid areas where agriculture may not be the main economic generating activity. However, there are many regions in the country with quality rainfall. This study recommends further analysis into the factors that motivate the youth to participate in areas whose primary economic activity is farming. Further, while the study observes that access to extension services influences the youth's participation in agribusiness, it does not indicate the specific services that influence participation in agribusiness. This study calls for further investigation into the different types of extension and training services, such as farming training, marketing training, strategic planning, financial literacy, and leadership management. In conclusion, this study did not assess the impact of youth participation in agribusiness on agriculture productivity in the country. This study calls for further assessment of the effect of youth involvement in agribusiness on agriculture productivity.

5.7 Limitations of the study

This study was not without certain limitations. The study limited itself to an analysis of the youth from only two counties; Machakos and Kiambu Counties. The study also limited itself to a descriptive design that collected primary data. The study further limited itself to components in the push-pull theory and the theory of planned behaviour. The study could have considered psychological theories.

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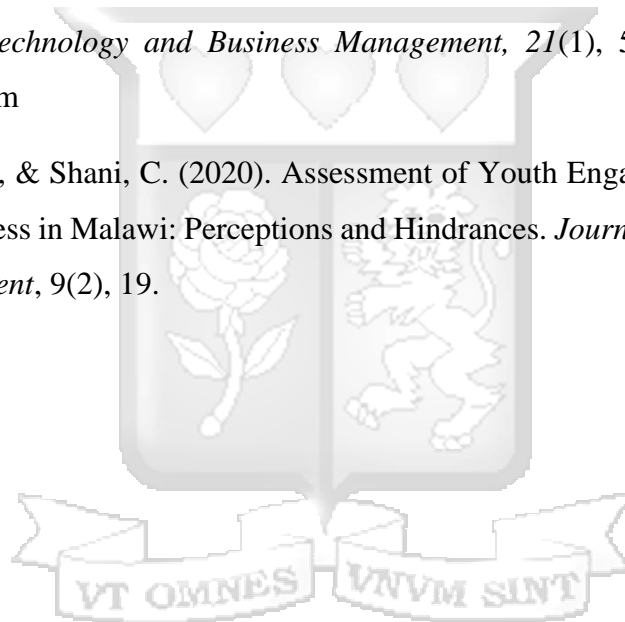
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APPENDICES

Appendix I: Participants Informed Consent Form

Title of the Proposed Study:

Factors influencing the participation of youth in agribusiness in Kiambu and Machakos towns in Kenya

Section I:

Investigator: **Lorraine Mutinda**

Institutional Affiliation: **Strathmore Business School (SBS)**

Section II: Information Sheet–The Study

2.1: Why is this study being carried out?

The research is being undertaken as a partial requirement for the academic award of Masters of Business Administration Degree. The intent of the research was purely for the academic purposes and no research data sought was utilized beyond that parameter.

2.2: Do I have to take part?

No, your participation in the study was upon your own willingness. Even upon consent to take part in the study, the respondent can decline to take part in the study at any point within the course of the exercise.

2.3: Who is eligible to take part in this study?

The study is only open to youth drawn from Kiambu and Machakos Town. The following number of participants was required in each town;

County/Town	Population	Sample Size apportioned
Kiambu	963,571	$963,571/1,289,820 * 384 = 287$
Machakos	326,249	$326,249/1,289,820 * 384 = 97$
Sample Respondents		384

2.4: Who is not eligible to take part in this study?

This research study is not open to youth who do not live within the two towns (Kiambu and Machakos).

2.5: What will taking part in this study involve for me?

Participation in the study was of importance in designing policies that can foster youth participation in agribusiness and identify factors that limit their involvement.

2.6: Are there any risks or dangers in taking part in this study?

The study poses no risk whatsoever to the respondents.

2.7: Are there any benefits of taking part in this study?

Yes the findings of the research are expected to likely support better policy formulation and enhance the participation of youth in agribusiness.

2.8: What will happen to me if I refuse to take part in this study?

Participation in the study is entirely voluntary.

2.9: Who will have access to my information during this research?

All the accessed research data was treated with utmost confidentiality and will not be disclosed to any person who is not party to the research process.

2.10: Who can I contact in case I have further questions?

Any query can be directed to me **Lorraine Mutinda** on +254 705873395. *Any further information can be sought from my Research Supervisor Prof. Simon Ndiritu through the Strathmore Business School Office.*

If you want to ask someone independent anything about this research please contact:

The Secretary–Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi, email ethicsreview@strathmore.edu Tel number: +254 703 034 375

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you;

Participation in the research study

I AGREE to be part of the research ()

I DO NOT AGREE to be part of the research ()

Storage of information on the completed questionnaire

I AGREE to have my completed questionnaire stored for future data analysis ()

I DON'T AGREE to have my completed questionnaire stored for future data analysis ()

Participants Name:

Participants Signature: Date:

I, _____ (Name of person taking consent) certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consents to the participation in the study.

Signature:

Date:

Name: **Lorraine Mutinda**

Appendix II: Research Questionnaire

Hello, the attached questionnaire aims to get information from youth on the factors influencing the participation of youth in agribusiness in Kiambu and Machakos towns in Kenya. I kindly ask for your kind assistance in answering the attached questions to the best of your ability.

Thank you for your participants in this research work.

Part A: Demographic Information

1. Please indicate your age?

2. Please indicate your gender?

Male ()

Female ()

3. How many members are within your household?

4. How many years have you been enrolled in formal education?

5. What is your current level of annual income?

6. Please indicate your current occupation?

Formal employment ()

Informal employment ()

Unemployed ()

PART B: PARTICIPATION OF YOUTH IN AGRIBUSINESS IN KIAMBU AND MACHAKOS TOWNS IN KENYA

Please tick the level of agreement of the following statements, as shown in the table.

Please indicate in the table with a tick (✓) or across (×) with a scale of

7. Have you ever participated in agribusiness activity?

Yes ()

No ()

8. Have you ever been able to access credit to undertake agribusiness activity?

Yes ()

No ()

9. What type of agribusiness activity have you participated in?

- Supply of farm machinery ()
- Seed supply ()
- Agri-chemicals supply ()
- Agricultural farming ()
- Horticultural farming ()
- Aquaculture farming ()
- Livestock farming ()
- Supply of farm produce ()
- Others.....

PART C: FACTORS INFLUENCING PARTICIPATION OF YOUTH IN AGRIBUSINESS IN KIAMBU AND MACHAKOS TOWNS IN KENYA

Please tick the level of agreement of the following statements, as shown in the table.

Please indicate in the table with a tick (√) or across (×) with a scale of;

5 = representing to a very great extent, 4 = to an extent, 3 = to a moderate extent, 2 = to a low extent and 1 = not at all

No	Market Factors	1	2	3	4	5
1.	I have knowledge on structures in place to support small business linkage to larger and global agricultural markets					
2.	I have been able to access readily available information on the various agricultural market conditions					
3.	I am aware of the market facilities developed to support agribusiness within our area					
4.	I am have seen adequate road linkages being developed to support accessibility to markets for agribusiness ventures					
5.	I have access to the market infrastructures available in our area					

6.	I have knowledge on readily available market for agricultural products to support involvement in agribusiness					
7.	I have knowledge on market quality and standards regarding agribusiness projects					

Please indicate in the table with a tick (√) or across (×) with a scale of;

5 = representing to a very great extent, 4 = to an extent, 3 = to a moderate extent, 2 = to a low extent and 1 = not at all

No	Technology Factors	1	2	3	4	5
8.	I have knowledge and access to new agricultural technologies within our area					
9.	I would accept and adopt any available of agricultural technologies					
10.	I have seen an improvement in the utilization of modern technologies within agribusiness					
11.	I have seen notable increase in investments towards research and development in agribusiness					
12.	I have access to readily available information on the various agricultural technologies within our area					
13.	I have access to technical assistance for most farmers within our area					
14.	I have access to modern agricultural machinery to agribusiness owners					

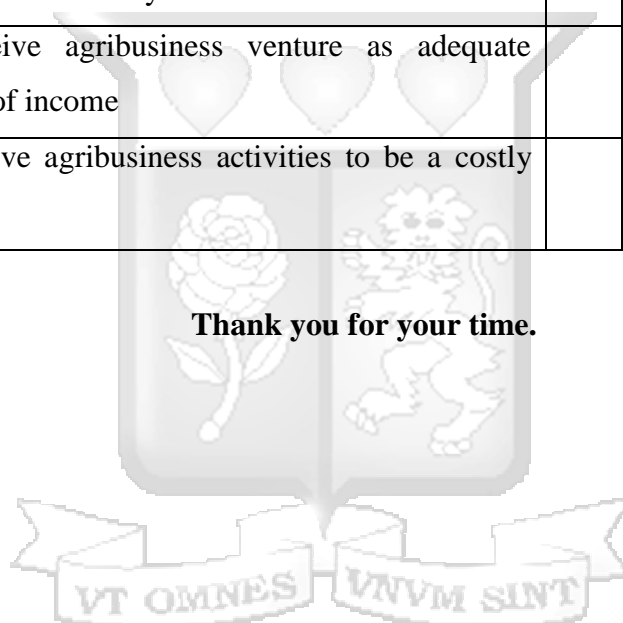
Please indicate in the table with a tick (√) or across (×) with a scale of;

5 = representing to a very great extent, 4 = to an extent, 3 = to a moderate extent, 2 = to a low extent and 1 = not at all

No	Socioeconomic Factors	1	2	3	4	5
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15.	I have been able to access financial assistance to setup agribusiness					
16.	Availability of adequate land has affected the youth participation in agribusiness projects					
17.	I within our area have been able to access relevant agri-education information that supports participation in agribusiness					
18.	I have access to employment opportunities which hinder their involvement in agribusiness					
19.	I have a positive perception of engaging in agribusiness activity					
20.	I perceive agribusiness venture as adequate source of income					
21.	I perceive agribusiness activities to be a costly venture					

Thank you for your time.



Appendix III: Krejcie and Morgan Table

Table for Determining Sample Size for a Given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Source: Krejcie & Morgan, 1970

VT OMNES VNVM SINT

Appendix IV: Summary of Diagnostics Tests
Collinearity

Variable	VIF	1/VIF
Technology factors	6.37	0.157043
Market factors	5.58	0.179150
Socioeconomic factors	3.44	0.290751
Informal employment	1.60	0.624490
Formal employment	1.56	0.642373
Male	1.02	0.980978
Mean VIF	3.26	

Heteroskedasticity

. estat hettest
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: Normal error terms
Variable: Fitted values of Participation in Agribusiness
H0: Constant variance
chi2(1) = 11.70
Prob > chi2 = 0.0006

Normality

	Descriptive Statistics				
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Participation in Agribusiness	374	-.668	.126	-1.563	.252
Market Factors	374	.421	.126	-.072	.252
Technology Factors	374	.725	.126	.009	.252
Socioeconomic Factors	374	.935	.126	.329	.252
Male	374	-.118	.126	-1.997	.252
Female	374	.118	.126	-1.997	.252
Formal Employment	374	1.151	.126	-.679	.252
Informal Employment	374	-.021	.126	-2.010	.252
Unemployment	374	1.201	.126	-.560	.252
Valid N (listwise)	374				

Appendix V: Ethical Review Committee Letter



16th May 2022

Ms Mullu Lorraine,
lorraine.mullu@strathmore.edu

Dear Ms Mullu,

RE: Factors Influencing the Participation of Youth In Agribusiness In Kiambu And Machakos Towns In Kenya

This is to inform you that SU-IERC has reviewed and **approved** your above **SU Masters'** research proposal. Your application reference number is **SU-IERC1317/22**. The approval period is **16th May 2022 to 15th May 2023**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

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

Yours sincerely,

for: **Dr Ben Ngoye,**
Secretary; SU-IERC

Cc: Prof Fred Were,
Chairperson; SU-IERC



Appendix VI: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 858613	Date of Issue: 29/March/2022
RESEARCH LICENSE	
	
This is to Certify that Ms.. Lorraine Mutinda Mullu of Strathmore University, has been licensed to conduct research in Kiambu, Machakos on the topic: FACTORS INFLUENCING THE PARTICIPATION OF YOUTH IN AGRIBUSINESS IN MACHAKOS AND KIAMBU TOWNS IN KENYA for the period ending : 29/March/2023.	
License No: NACOSTI/P/22/16545	
858613 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Verification QR Code	
	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	